

FORESTS



SUGARING TIME • See Page 10

How much wood could a woodcutter cut?

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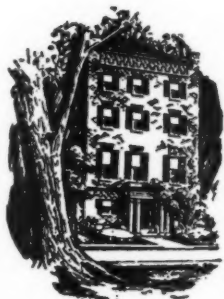


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The American Forestry Association, publishers of *American Forests*, is a national organization— independent and non-political in character—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and the part they play in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

American FORESTS

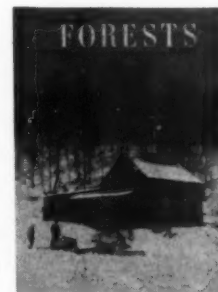
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CONTENTS

AMERICAN FORESTS FORUM	2
WASHINGTON LOOKOUT	4
By G. H. Collingwood	
LOGGING WITH RADIO BEAMS	6
By Albert Arnst	
SUGARING TIME	10
By Mabel Otis Robison	
LAST OF THE RIVER PIGS	12
By O. A. Fitzgerald	
YOUR SHADE TREES—Let Us Spray	17
By R. R. Fenska	
WHITE ASH, SULTAN OF SWAT	18
POP'S SON-IN-LAW	20
By Francis H. Ames	
MANAGING YOUR WOODLAND—Thinning Hardwood Timber Stands	23
By H. D. Bennett	
GALLERY ON THE SQUARE	24
By Edith Tallant	
LIVING WITH DUTCH ELM DISEASE	26
By William C. Shepard and A. W. Hurford	
EDITORIAL—Who'll Cut the O & C Melon?	52

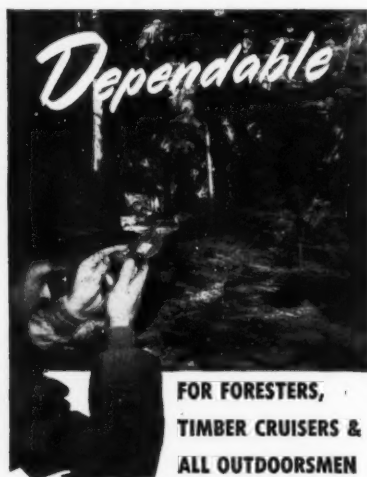
Cover

Ask a Green Mountain farmer for the time along about now and he's likely to tell you—without so much as a glance at his watch—that it's sugaring time. And so it is. When the sap begins to rise in the maples, all rural Vermont is animated by one of the state's oldest agricultural enterprises—maple sugar making. Pails are scoured, sled tanks repaired, trails broken through snow-covered groves and fuel wood piled high against the sugarhouses. Taken by Edmund H. Royce, this month's cover photo depicts such a scene at Robert Branon's farm near St. Albans, site of festival April 25-26 (see page 10).



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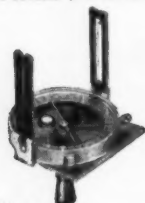
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American FORESTS Forum

Looking Ahead—Public Parks, Or Public Dumps?, asks **Annette H. Richards** in the May issue. It's a question well worth considering, too, when one realizes that the damage wreaked by vandals and unthinking misusers of our public parks and forest recreation areas exceeds six million dollars a year. Adequate appropriations, to be used in part for a better educational program, is one of Miss Richards' pleas. For an exceptionally well illustrated report on the annual snow surveys conducted in western mountains January through May, you won't want to miss *How Much Water Did It Snow?*. Pictorially and with words, **Robert Branstead** of the SCS Portland office tells well the story of forecasting the summer's moisture supply in mid-winter.

This is the time of year when hikers get the urge to roam the Appalachian Trail, so **Dorothy M. Martin** asks, *Do You Want to Take a Walk?*, then unfolds a bit of lure about the trail which stretches from Maine to Georgia. You'll also be treated to another of **Harry Botsford's** light and amusing articles, *Jokers Wild*, and a widely assorted fare of how-to-do articles, including **Nell Evans' How to Cook and Care for the Ones That Didn't Get Away**, **H. B. Steer's** advice on a homeowner's method of keeping back porch or lawn furniture from decaying, and the usual *Shade Trees* and *Managing Your Woodland* features.

Among Our Authors—Congratulations are in order for **Albert Arnst**, author of *Logging With Radio Beams* (page 6). He is the newly named editor of *The Timberman*, 52-year-old lumber trade journal published in Portland, Oregon. Arnst has been a frequent contributor to these pages during the past six years in which he has been dispensing public information for the Weyerhaeuser Timber Company. **O. A. Fitzgerald**, who offers *Last of the River Pigs* (page 12), has been able to boast a by-line in one or more outdoor magazines or in *Ford Times* or *Lincoln Mercury Times* for more successive months than any other Idahoan. His most recent in *American Forests* was *Idaho's Pole Blight Clinic* (October 1951).

Francis H. Ames lives in the big timber country of Oregon, locale for his fiction story, *Pop's Son-in-Law* (page 20). His fiction and articles frequently grace the pages of the other outdoor magazines. **Mabel Otis Robison** specializes in delightful picture stories she comes across along highways and in the recreation areas of the United States and Canada. *Sugaring Time* (page 10) appealed to her, and us, as typical springtime Americana.

Our Readers Say—From **Olaus J. Murie**, president of The Wilderness Society, comes:

I enjoyed **Jay Ellis Ransom's** story on the *Island of Outside Men* in your January issue. It is well written and brought back nostalgic memories of that interesting region, although snow igloos are entirely out of place for the Aleutian Islands, where the partly underground sod barabaras are the characteristic architecture.

I am disturbed, however, by the author's naming of Amchitka as the *Island of Outside Men*. Could there possibly have been some confusion in the information given by the Aleuts? In 1936 I was in the Aleutians for the Fish and Wildlife Service, making a biological survey of the islands. We found the mummy cave on Kagamil Island and notified Dr. Hrdlicka, who was then at Kiska, presenting him with a collection of mummy material which had been disturbed by the foxes. Later in that summer Dr. Hrdlicka obtained the help of the Coast Guard and thoroughly explored the mummy caves on Kagamil and brought all the material to the Smithsonian Institution in Washington, D. C.

I wonder if Dr. Hrdlicka made another trip and found more mummies, on Amchitka? It would be of great interest to have this point cleared up.

I am very happy to see you running a series on the mining situation (*Abuses Under the Mining Laws*, January, February and March issues), which is really a national scandal.

Mr. Murie was correct. The Smithsonian Institution had record of Dr. Hrdlicka exploring mummy caves only on Kagamil Island, although he did spend considerable time on Amchitka.

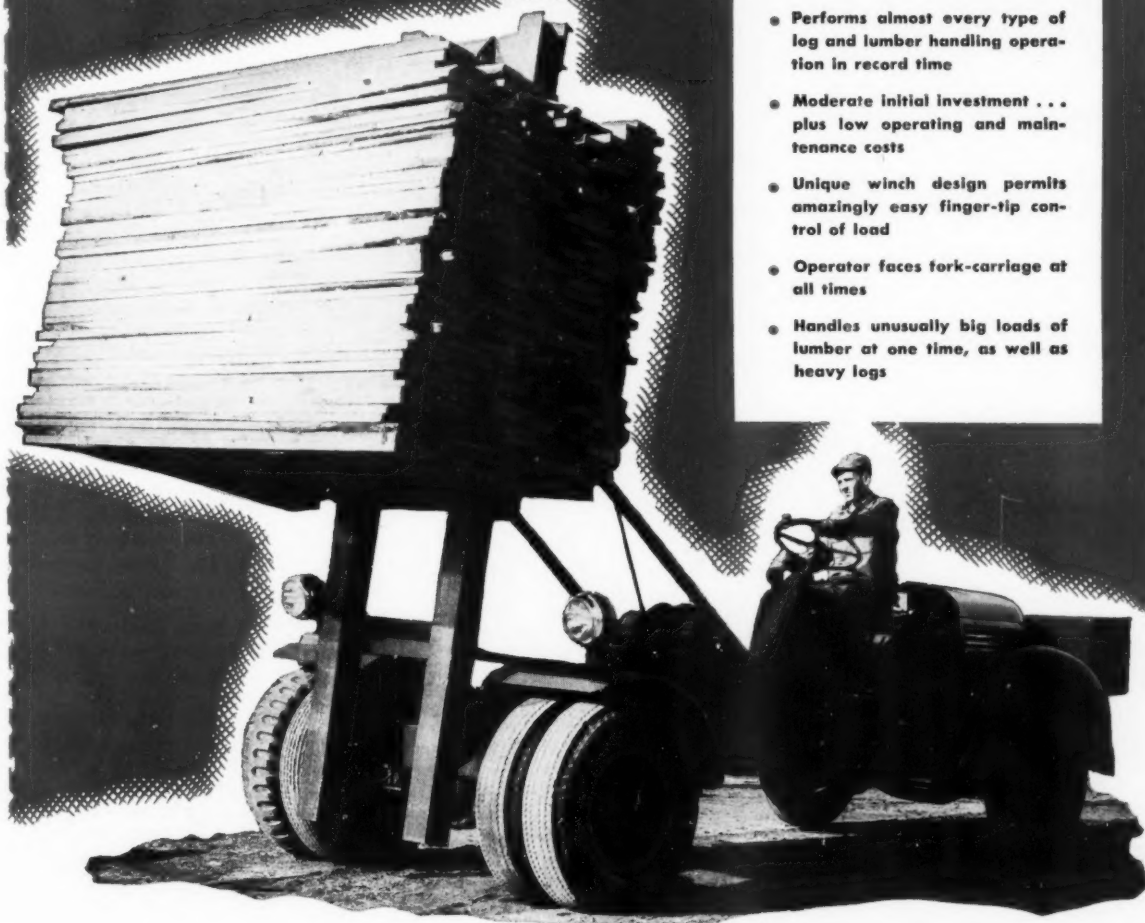
C. Earle Miller of Chester County, Pennsylvania is among the many readers perturbed by conditions reported in our *Abuses Under the Mining Laws* series. Of the February installment, *Pumice, Despoiler of the Santa Fe*, he writes:

All the people in New Mexico should read about pumice mining. Having known

(Turn to page 50)

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WASHINGTON LOOKOUT

By G. H. COLLINGWOOD

Access roads to timber on national forests and other federally-administered lands were given a boost by the National Lumber Manufacturer's Association during recent hearings on S. 2437, as introduced by Senator Dennis Chavez of New Mexico. This bill carries authorization for regular appropriations for forest highways and trails, and a new item of \$150,000,000 for a five-year defense highway construction. The lumber industry representative urged an amendment which would specify five annual appropriations of \$25,000,000 a year for access roads on national forests and \$5,000,000 a year for similar roads on the O & C and Indian Affairs lands. Representatives Charles A. Buckley of New York, and George A. Dondero, of Michigan, have introduced similar bills as H.R. 6094 and H.R. 6180. Action on the Senate bill awaits the recommendations of the Committee on Public Works.

Oregon and California revested lands are much in the limelight with bills in the Senate and House intended to settle the controversy as to whether some 450,000 acres of controverted lands should be administered by the Bureau of Land Management of the Department of the Interior, or by the Forest Service of the Department of Agriculture. As might be expected, the sponsors of the bills before Congress come from Oregon where the lands in controversy are located.

Senator Guy Cordon and Representative Harris Ellsworth have introduced identical bills, S. 539 and H.R. 6662. Senator Cordon's S.539, which he introduced on January 17, 1951, was amended and reported out on February 25, 1952. In Senate Report No. 1214, the Committee on Interior and Insular Affairs said:

"Measures to accomplish the purposes of S. 539 have been before the successive Congresses since 1941. Exhaustive hearings were held in 1943 and the legislation has been twice previously favorably reported and passed by the Senate. On each occasion the measure was favorably reported from the House committee. On one other occasion a similar House

bill was reported from the House committee.

"The lands affected by this proposed legislation are part of an early railroad grant in the State of Oregon. The government recaptured title to the grant lands by the act of June 9, 1916, due to violation by the grantee railroad company of certain terms of the grant. . . . The 1916 act provided for administration of the revested lands by the Interior Department, for getting the lands into private ownership, and for reimbursement of the counties for their tax loss."

The act of August 28, 1937, under which the lands are now being administered, provided for their administration in the interest of conservation, but was vague as to the status of some 450,000 acres in the unpatented portion of the revested grant. The law failed to answer the question as to whether these controverted lands were to be administered by the Department of Agriculture under national forest laws, or by the Department of the Interior under the 1916 act, as amended. Accordingly, some \$5,000,000 in timber sale receipts acquired since 1937, are impounded in the federal treasury.

The Senate Committee has recommended that all the lands in question be administered by the Department of the Interior and that payments to the counties in which the O & C lands are located be continued in accordance with the provisions of the act of August 28, 1937.

In the light of this recommendation, passage of S. 539, becomes a matter of considerable financial importance to the federal and local governments. In line with the administration of the non-controverted O & C lands, at least 50 percent of the impounded funds would be paid to the so-called O & C counties, and the remainder would revert to the Treasury. This is in contrast to the Forest Service policy, under which 25 percent of the gross receipts are paid to the state (in this case Oregon), and an additional ten percent is paid to the county of origin for use with its school and road funds.

The bill also offers a plan which would permit the Secretaries of the two Departments to exchange title to the mile-square sections which com-

prise the checkerboard plan of land ownership, so as to bring together considerable areas of O & C lands, and comparable areas of national forest lands. Needless to say, the land would remain unchanged, but the Bureau of Land Management would be able to apply its administrative laws to reasonably large areas of O & C lands, and the Forest Service would have comparable opportunities as applied to contiguous areas within the national forests. The bill provides that the regrouped lands "shall be approximately equal aggregate value."

Reorganization of the Department of Agriculture as provided in S. 1149 offered another solution to the O & C land problem by proposing to transfer jurisdiction of responsibility for their surface areas from the Bureau of Land Management of the Department of the Interior to the Forest Service in the Department of Agriculture. This met such vigorous opposition from Secretary of the Interior Oscar Chapman, during hearings conducted last fall, as to give rise to rumors that the Senate Committee on Expenditures in Executive Departments will redraft the bill. Thus far, only a Committee print containing no major changes in the section dealing with the O & C lands has appeared, and no report has been submitted by the Senate Committee.

Tree farmers and other forest owners maintaining sustained yield timber operations are seeking protection against encroachment by the impounded waters of federal dam and reservoir projects. To meet this situation Senator Cordon, of Oregon, introduced S. 2687 on February 19, to permit owners of timber lands being operated and managed under sustained yield forest principles to claim as substitutes for the inundated lands similar and suitable lands in federal ownership. In general, most of the lands in question are now within national forests. No hearings have been held by the Senate Committee on Public Works, to which the bill was referred. The Forest Service position on this bill has not been determined and no hearings have been scheduled.

The "Smokey Bear" bill to reserve use of the figure and name of the little bear to acceptable fire-prevention purposes, passed the Senate on January 28. This was S. 2322 as

(Turn to page 51)

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Logging WITH R

Television in the tall timber?
Could be. FM radio, snickered at by
loggers a few years ago, now is
forest industry's indispensable tool

By ALBERT ARNST



LOGGERS in the Pacific Northwest are wondering what will happen to their colorful industry, if and when TV makes its debut in the tall timber.

Paul Bunyan's boys have reason to be concerned. Based on the drastic face-lifting of their industry—all for the good—caused by the recent advent of FM ultra-high frequency radio, any other improved medium for bridging aerial distances might create a minor revolution.

Imagine the logging superintendent sitting in the head office with screens bringing him projected images of his "tin-hat" crews at work, at the touch of a dial. And don't be hasty in saying this is impossible. A few years ago the present use of radio was considered by many to be just an idealistic dream. In fact, loggers and industry leaders are still shaking their heads over what industrial two-way radio has done to streamline their jobs and business.

This new tool of the logging industry has gained its firmest foothold in the mountainous western states, where transportation is a major problem. Now it is gaining increasing favor in other sections, too.

The latest antennae count in May, 1951 showed that 123 forestry industry operations in 23 of the United States had installed industrial two-way radio communication — 95 of these operations are in far western states. Twenty-three are in the southern region, two in the Lake States and three in New England.

These timber growing and harvest-

Radio Engineer Lippincott services
175 Weyerhaeuser sets in two states

AMERICAN FORESTS

RADIO BEAMS

ing companies have 2789 sets in operation, saturating the air waves with talk about timber, logging work and forest fires. A total of 263 of these sets are fixed or base units, while 2526 are mobile, installed on roving equipment operating on land, water or in the air.

Authority for these statistics is Elmer Surdam, secretary-manager of National Forest Industries Communications (NFIC), with headquarters at Eugene, Oregon. Surdam heads up the industry's self-organized group which chaperons the awarding of new licenses, engineers surveys for new installations and helps police the air waves. NFIC represents the nation's private industrial group of forest owners before the Federal Communications Commission (FCC) in coordinating radio frequency assignments.

"Private owners deriving their raw materials from forest growth have a great public responsibility, and radio communication has become a necessity in private forests where long range enterprises are growing trees on 100 year rotations. NFIC has been established to assure its members and the public that radio frequencies granted will be used with maximum efficiency. It retains both legal and engineering counsel," says Surdam, whose coordinating activities keep him shuttling nationally.

NFIC-sponsored progress in harnessing air waves to tame the wild country is especially remarkable in that the timber industry was allocated its first exclusive short wave frequency by the FCC on July 1, 1949—less than three years ago. As late as 1947 there were only two experimental systems on the air.

Historically, NFIC had its genesis

February 27, 1948 when the Forest Industries Council voted to sponsor the special committee for the purpose of securing from the FCC air lanes for use by the forest industries.

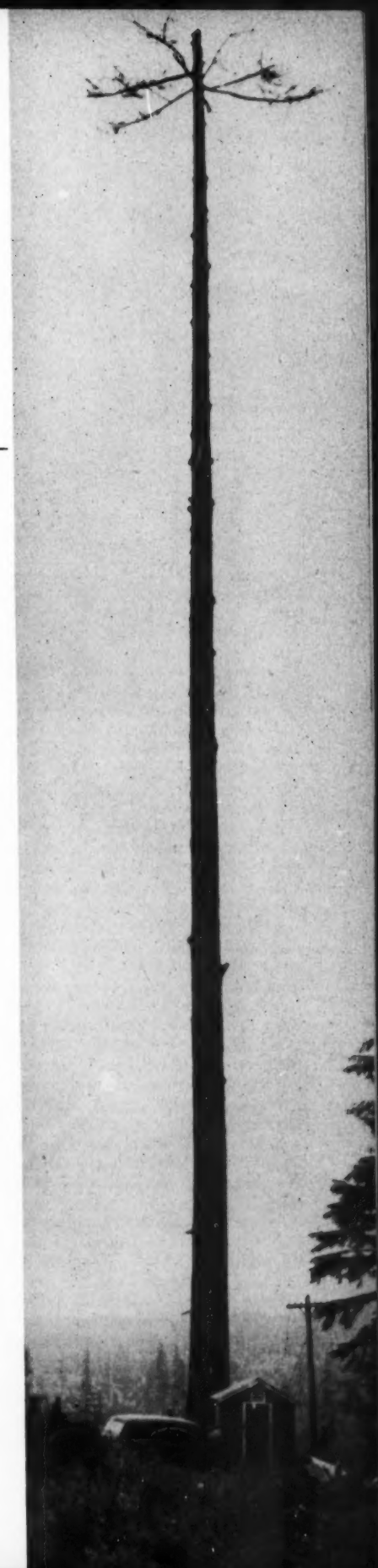
Prior to this action by the Council, FCC had outlined to the radio committee of the Pacific Logging Congress essential conditions to be met before the industry's case would be considered.

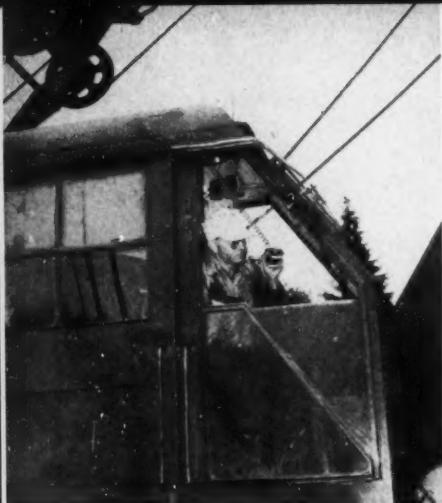
The industry had been told to prove its nation-wide need of air lanes, set up a national policy-making advisory board for the purpose of policing the use of traffic lanes acquired, and organize regional frequency advisory committees composed of radio users to act in a local advisory capacity on communication assignments to operators. These groups in turn would then form a national executive committee which would act on top-level policy matters before the FCC and before other services using two-way mobile radio.

After considerable expenditure of labor and funds, regional committees were assigned in the Lake States, Northeast and the South. With the western group spearheading the movement, the United States was divided geographically into the present four regions. The regional executive committee chairman joins with the chairmen of the regional frequency advisory committees to constitute the National Radio Executive Committee.

In 1949, the industry was given a special Forest Products Radio Service by FCC and was assigned ten exclusive air lanes. Four additional channels are shared with Special Indus-

Antenna atop this 212-foot-high tree assures good line-of-sight transmission

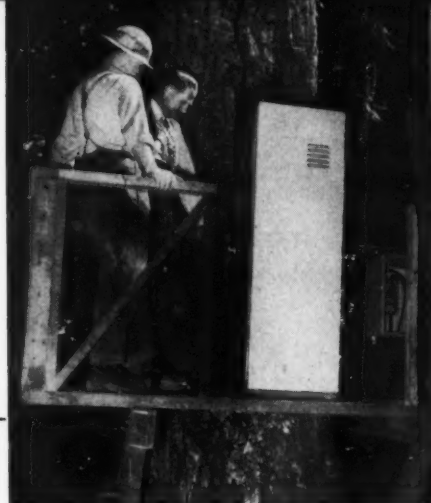




Two-way radio keeps railroad crane operator in touch with home office



Portable sets are very handy, invaluable in case of emergency in woods



Forester Francis Neuman, left, chats with Elmer Surdam, official of NFIC

trial Service, 11 frequencies with the petroleum industry. Numerous other frequencies in the high end of the spectrum are on a shared basis under developmental conditions.

Surdam describes radio communications as a vast party line system, calling for a local pattern for individual users. It is the role of NFIC to provide central administration, establish good housekeeping and avoid overcrowding. Voluntary membership contributions (a large bulk coming from the west) support NFIC. Headquarters were first established in Portland, Oregon but were transferred to Eugene about two years ago.

Surdam describes the future of radio in glowing terms:

"The forest industry has invested one and one-half million dollars in radio communications equipment in less than three years. If equipment is available, by next year we will have doubled that figure. Many of our present users admit that radio on their operations has paid for itself in less than a year. Look out when the radio snowball really starts rolling!"

What has made two-way radio click in this phenomenal fashion? The answer is best obtained from one of the many companies which today can't get along without it and wonders how it ever did.

On July 1, 1949, Weyerhaeuser Timber Company had network installations, partly experimental, at only three branch plant operations—Coos Bay and Springfield in Oregon and Vail-McDonald in Washington.

Today the company uses approximately 175 sets to link 12 Oregon and Washington tree farming and logging operations with an aerial

"road" system. Under ideal conditions and with some relaying, this integrated network of line-of-sight communication could span the airline distance from Canada to California in a matter of minutes.

The sets are installed in a wide variety of places: logging headquarters, work camps, log reloading stations and in mobile equipment ranging from pickups and fire trucks to railroad locomotives, tugboats and airplanes. On land, water or rail, a worker may be out of sight but not out of voice range.

Two-way radio is a prime logging tool and has won many friends in the timber harvesting fraternity. Ask the logging superintendents, who get gray hairs worrying about the daily tussle with timber.

Newest innovation in industrial two-way radio is a "cooperative," established in southern Oregon late in 1951. The scheme offers possibilities in areas where smaller landowners operate tree farms. The Southern Oregon Conservation and Tree Farm Association, with a membership of 23 companies, pooled the financial resources of individual firms and invested in 60 operating radio units, including one central station and many mobile units.

Thus the group of companies is able to derive the advantages of radio through capital investments beyond the financial ability of its individual members. Secretary-Manager L. L. Simpson can point to an impressive record of lives saved, increased fire protection efficiency and few logging shutdowns due to equipment breakdowns.

Considerable credit for improved present-day equipment is due Harold

K. Lawson of the U. S. Forest Service in Portland, regarded by some radio engineers as the birthplace of short-wave communication developments within the forest industry. Lawson guided the work of the radio laboratory established by the Forest Service in Portland in 1934. Now, however, most of its research functions have been assumed by private industry, and the laboratory which once had 27 employees is closing its doors.

Paradoxically, loggers probably were the most hesitant to accept radio for they considered it primarily a forester's ally, useful chiefly in fire protection activities. Weyerhaeuser's forestry staff at Coos Bay as early as 1947 pioneered in developing remote control transmitters and side-mount power units for mobile equipment like pickup trucks. Loggers as a rule, however, weren't interested in such new-fangled contraptions.

Weyerhaeuser's full-time radio engineer, Ellwood Lippincott, tells the documented story of how radio has invaded the logger's ranks to become almost as standardized as the falling saw.

"Our total of about 175 sets installed to date is a long jump from the 23 radio sets the company had when I started work in February, 1949. Two-way radio has won its way honestly by proving its value in protecting loggers' lives, saving timber from fire and stepping up production. The cost of an installation can pay for itself when a forest fire is put out by prompt action of a crew quickly alerted," says Lippincott in summing up the record.

Take a potential forest fire day, for instance, the kind dished out copiously by 1951's too-dry summer.

The unusual rash of fires in the Northwest's tinder-dry forests might have been much worse this year if it hadn't been for two-way radio.

Here's a typical illustration:

Logging superintendent Albin Olson at one of Weyerhaeuser's Washington operations is out on the network of logging roads, making his daily rounds between five widely-scattered logging "sides," each producing its quota of truck-hauled logs.

on humidities. Two sides have reached the danger point. These are closed down immediately. The other three are still safe, but probably can't log much longer.

Riding on the air waves, the action has taken only a few minutes. As if by magic, an entire operation spread over many miles of rugged topography, has been shut down or alerted for closure. Not too many years ago it would have taken an entire day of

hears the call, grabs the "mike" and by consulting his parts catalogs soon finds the gear, shaft or fitting required. In a matter of minutes, the warehouse attendant finds the "gimmick" and a special delivery pickup and mechanic are on the way to render first aid. The machine is back in business in a short while.

Trucks leaving the reload station, where log loads are transferred to railroad cars, frequently can be saved

Thanks to radio, logging superintendent can keep tabs on various phases of operation scattered over wide area



The overhead radio speaker in the cab of the pickup truck suddenly voices:

"KOB 393 calling P221. Olson from Neuman. Stand by for weather report."

Olson lifts the microphone from the dashboard hook, presses the talk button and his set whirs into action.

"P221 to KOB 393, Neuman from Olson. Over."

"KOB 393 to P221. State Forester Orell has ordered closures for today. Humidity here down to 35. Check all sides and advise them of logging shutdown. Over."

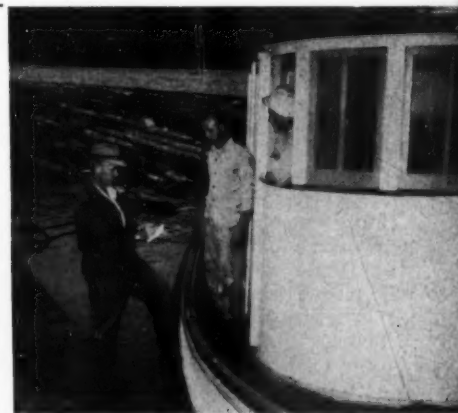
"P221 back. I'm on my way now to the high lead side. Will check humidity there. Will contact other sides immediately. P221 by."

In a few minutes Olson has called five different sides, all radio equipped. He gives the closure order and checks

rigorous travel to reach all these operations. Two-way radio literally has put every logger within arm's reach of headquarters and has helped to flame-proof forests.

Machine breakdowns in the woods cost money. A big tractor may burn out a final drive or a huge yarding engine may develop engine trouble. Even a few hours' shutdown of these log hustlers, heart of a logging side, puts many men out of work—rigging slingers, loaders, truck driver and choker setters. It also puts a big crimp in the day's output of logs for the mills.

Two-way short wave radio has paid its way in keeping machines running. When a machine breaks down, the operator immediately diagnoses the trouble, notes the repair parts needed and commands the radio. Down in the distant valley the shop foreman



River boat equipped with two-way radio saves crewmen plenty of valuable time

a long trip back to an empty landing. If a side breaks down and can't load logs, the trucks serving that side can be redispached by radio to another active side.

These are a few of the many ways radio has streamlined the logger's job. The logging superintendent has become more efficient, because in the office or on the road he can keep tab on his operations and give orders and instructions to meet changing conditions.

Radio has saved lives, too. A logger hurt in the woods now has help within his immediate reach. A radio-dispatched ambulance can be waiting at the road when he is brought out by his fellow workers. Where necessary, doctors can be summoned from town and special hospital attention readied.

Weyerhaeuser's radio installations operate on two bands assigned by the FCC, 153.35 and 49.38 megacycles. The former is used at the White River, Vail and McDonald branches in Washington, and is shared with several other companies in the forest industry and also with the petroleum industry. The second

(Turn to page 42)

By MABEL OTIS ROBISON

YOU know spring has come to Vermont when you see pails hanging from the maples and thin blue smoke rising among the trees.

Up in the Champlain Lake region is Franklin County. Its county seat, St. Albans, proudly calls itself the Maple Sugar Capital of America, for neighboring farmers annually tap about 900,000 maples, producing up to a quarter million gallons of syrup.

On April 25th and 26th, St. Albans will celebrate its fifth annual Maple Sugar Festival, and the townspeople will again build a real sugar house in Taylor Park, complete with arch, evaporator and storage tank. Using an ox-drawn tank sled, they gather sap from the big maples tapped right in the park area and crown the oldest sugar producer as Maple Sugar King at a boiling-off ceremony. Adding glamor to one of the greatest sugar producing areas in America, they also spotlight scores of Colonial-day customs.

There's dancing on Church Street in early day costumes to the music of country fiddlers. There are square dance caller's contests with teams from various granges competing for honors. There's sugar-on-the-snow served at the sugar house where syrup, boiled to the waxing point, is poured over snow or cracked ice to form brittle sheets of sweetness, tastiest when eaten with sour pickles or plain doughnuts. There's an art exhibit, favoring sugar house and maple forest scenes. Plenty of athletic events and tournaments keep the young folks busy.

Early settlers of Vermont followed the practices of the Indians in making sugar from maple sap. Legend has it that the Indians discovered its goodness when a squaw boiled venison in sweet water from a nearby maple tree. Because she was busy em-

Square dancing and oldtime costumes lend a pioneer atmosphere to the annual spring celebration in St. Albans



Taylor Park, setting for tree-to-table demonstration

SUGARING T

broidering a pair of moccasins, she forgot her cooking and the water boiled down to a thick syrup. Her husband told everyone it was the most delicious dish he had ever tasted. After that, the tribes tapped the maples every spring, storing the sap in great elm bark troughs.

The pioneers copied these methods, using hollowed-out basswood logs for storage purposes. They made sugaring time the occasion for outdoor parties and kept improving on the crude ways of the Indians. Thus, sugaring in the spring is one of Vermont's oldest agricultural enterprises.

Before the buds swell, before the grass appears and before plowing be-

gins, roads are broken through the snowy woods and the freshly scoured sap buckets glisten against gray wood as they are distributed through the maple grove in readiness.

Farmers wait then for the rising of the sap. Crisp cool mornings are followed by warm days and melting snows. Robins appear and the early birds call back and forth. Squirrels come out of their holes to add to the chatter. Waterfowl fly northward as the tide of the season advances. Bees leave their hives.

Then one crisp day the farm force mobilizes. If there are only a few trees, the family gathers its spigots and big kettles and walks through the melting snow to catch the first run of sweet sap. Fire is built beneath the kettles and the sap is boiled till the syrup crystallizes.

Today, however, most sugar making is big business. A hole about two inches deep is bored in each tree, some of which have been tapped since Pilgrim days. A sap spout is inserted, the bucket is hung and the drip, drip begins—about 60 drops to a minute.

In scheduled trips through the woods, buckets are emptied into the hauling tank which carries the liquid to the sugar shanty, generally a

AMERICAN FORESTS



TIME



"Sugar-on-snow" is popular delicacy during the maple sugar season



Gala climax to Vermont's maple syrup making season will be the festival April 25-26 at St. Albans, one of the "sweetest spots" in the U. S.

weatherbeaten structure close to a side hill. This is not for a picturesque effect but so the loads of sap can be driven along the upper side and emptied by gravity into the large storage tank, placed to the north of the sugar house for keeping cool. A woodshed at one end is piled high with wood to feed the fires.

As the sap runs into the evaporator it gurgles through a series of compartments as it boils. Steam fills the room and floats up through the ven-

tilators. The evaporator boils up to 60 gallons an hour and it takes 38 gallons to make a gallon of syrup.

When the syrup is done, some of it is retained by the farmer for family use, or sold by the gallon to his mail order customers. The greater bulk is run into 50-gallon drums and sent to a processor for handling.

After the frost is out of the ground and the snow disappears, the flow of sap stops. Sugar weather is always
(Turn to page 32)

Large quantities of Vermont syrup are canned, shipped to all parts of world

Farmers in Vermont's Champlain Lake area yearly tap about 900,000 maples



Horse-drawn tank sleds are used to haul sap from woods to sugar house

For each gallon of syrup, 38 gallons of sap must be boiled in evaporator





Bill Aiken, chief pilot of the Clearwater drive, has been a river logger for more than 40 years

Loggers who battle Idaho's Clearwater on one of the last big river drives still get their thrills, but dunking and drama are a lot less common than they were a century ago

By O. A. FITZGERALD

COOK Harvey Spears moved up to the right front corner of his floating cookhouse for a ring-side seat on the ride through Big Eddy. For about the 20th time, Bill Aiken, veteran of 40 years of western river logging, was heading a wanigan into one of the trickiest spots on the 80-mile run down Idaho's Clearwater river, home of the last of the big river drives.

Seconds later, Spears felt icy water fresh off the snowbanks in the high mountains stretching back to Montana, lapping around his neck. That dunking came when his corner of the wanigan went under, way under. Instinctively Spears grabbed the overhead rafters and pulled himself up. While he was doing that, tables, benches, grub boxes, mattresses, bedding—in fact everything that would float—went out the low side.

Its rear steering sweep snapped by the river's mighty wallop, the wanigan ran wild, not calming down until it reached smoother water. Downstream away, Spears took another look out on the river. Floating alongside the wanigan was the mattress from his bunk. Perched atop it was his suitcase, riding high and dry. Reaching for a pike pole, Cook Spears hauled in his personal possessions.

Pencil pusher Roy Carroll, officially listed as the clerk of the drive, was

Last of



also riding the dunked wanigan. In the parade of floating things he spotted a familiar cardboard box: his log drive "office." In it were all the records that would determine the size of the checks the men would get when the last of the sawlogs had been herded into the big millpond at Lewiston.

Once again the pike pole went out. In came Carroll's box. Out it went again. Back came his mattress, Carroll's .22 rifle riding securely near its center. River loggers have learned from experience that the center of their mattress is just about the safest place there is for valuables. Only thing to come through dry in that Big Eddy dunking was the roast in the oven. Even the fire in the stove was doused.

Thrills like that were common nearly a century ago when white water loggers ruled on the Kennebec, St. Johns, and Penobscot rivers in Maine. River driving still was dramatic when the scene shifted westward into the Lake States and later across the Rockies to the Pacific Northwest. Men who come down the Clearwater in the last of the big drives staged by Potlatch Forests, Inc., get their thrills, but river driving today is a lot more considerate of human welfare than that of the early days.

Temperament of the river not only determines how many thrills a drive

will produce but how long the 35 picked river loggers, or river pigs as they call themselves, and their wanigans will be on the run. On one drive the crew was all through five miles downstream from the spot where the wanigans were built. While the river loggers were tail-ending the drive that far the Clearwater shot up ten feet, lifting and carrying with it every one of the hundreds of thousands of sawlogs dumped along its banks the previous fall and winter by the three camps cutting for the drive.

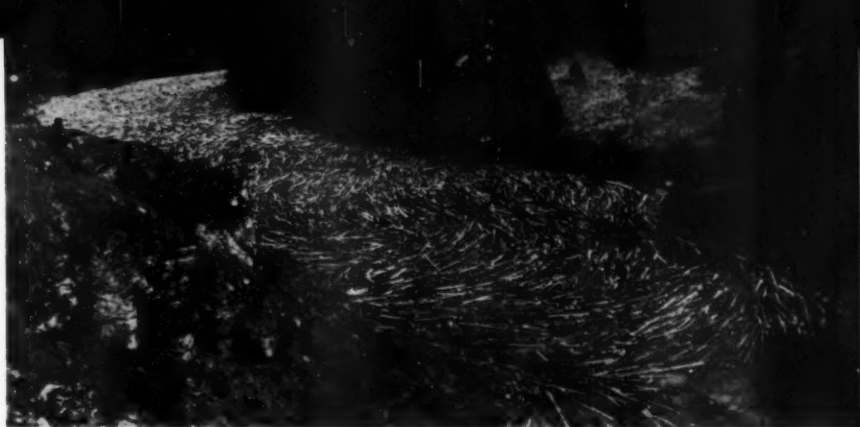
In one grand rush the rising river carried downstream enough potential lumber to build five-room houses for a city of 25,000 population. Seldom has any river provided such cheap

and speedy sawlog transportation. Actually, the Clearwater overplayed its hand that year. Thousands of the logs were swept right on past the sawmill pond, into the Snake and on into the Columbia. A few even reached the ocean. Some logs were beached, loaded into trucks and hauled back upstream. Some were picked up by mills on the lower Columbia, where saws turned to Douglasfir felt for the first time the touch of Idaho white pine.

Another year the loggers stayed on the river more than three months. Logs loafed along the shore, piled up in eddies and in center jams. With a log drive costing around \$100 every hour, the river certainly got no commendation that year for economical sawlog transportation. Even the wanigans got stuck, as they frequently do at anchor when the river is falling. If the loggers can't push them back into the stream bulldozers move in for a big push. One wanigan was balanced so expertly and securely atop a boulder it was necessary to cut a hole through its floor and dynamite the rock.

The river may be erratic and unpredictable but the meals those river pigs come in for certainly aren't. The eyes of any old-time Maine logger would pop at the sight of the grub spread out three times every day. River loggers are given—and consume—just about twice the quantity of food served per man in the permanent woods camps. Anyone who has eaten with the lumberjacks knows what that means.

Sawlog herding down the big Idaho river is done on prime roasts, thick steaks, fresh fruits and vegetables and enormous quantities of pastries and ice cream. California orange growers would applaud the huge per capita consumption of their produce on the



Log jam on the Clearwater. Only a fast-rising river can budge a mass like this

the River Pigs



Big machines help out on today's river drives, but pike poles and peavies are still important

river drive—all between meals. Maybe these natural vitamins cold-proof the men. Sniffles are practically unknown, yet the men slosh around knee-deep to waist-deep in the icy water all day.

Presiding over the floating kitchen is a top cook from one of the permanent Potlatch camps. Not only must he be a top cook but an ace baker, for all cakes, pies, cookies, and pastries are produced on the river. From his wanigan oven, Cook Spears produces pastries of which any housewife would be proud. His lemon pie is a favorite with the rivermen.

Very rarely have the Clearwater river loggers missed their hot meal—but one miss was a dandy; five rocky



Fortified with a breakfast befitting size of their job, drive crew mans batteau, heads down river to begin work

failure. Five rocky miles downstream Bill and his bob-tailed crew—only one man was left—finally brought the wanigan to shore.

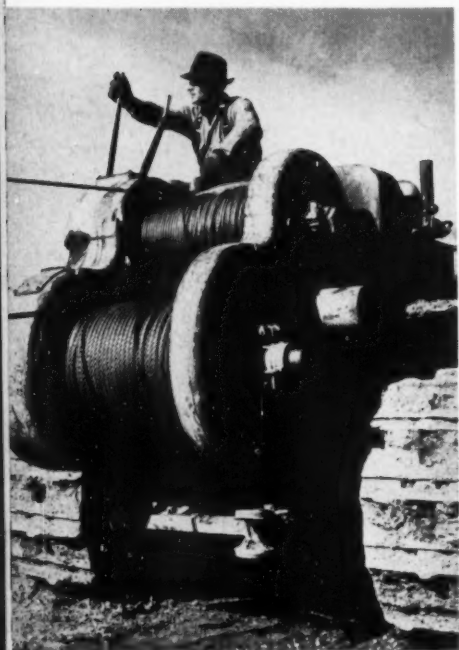
Not until 11 o'clock that night did the loggers get anything to eat—sandwiches that had been backpacked those five trailless miles upstream. Next morning, however, the men got a breakfast that made them forget all about the landing mishap of the previous afternoon. Only trouble was they didn't get it until 9 o'clock, three hours behind schedule and a five mile hike.

First half of the Clearwater drive is through a rugged, roadless canyon. Wanigans are stocked with a two-week supply of grub at the drive start. Ordinarily that is about the time required to clean up the logs

downstream to the start of the river road. The way those river loggers eat the grub supply at the start of the drive would keep a small grocery store in business.

During the first part of the drive the sawlog herders are all alone, save for their contact with the outside world by two-way radio. On the last half, however, their operations become a top tourist attraction. For more than 40 miles a road follows the river.

In the early days of the drive, Potlatch Forests often treated visitors to the thrill of a log drive meal. That stopped when crowds got so big the cooks just couldn't handle them. A Sunday on one drive saw cars lined up for more than half a mile each way from where the river pigs were tear-



Double-drum cable tractors drag logs into river from a jam in midstream

miles. Although Bill Aiken knows every rock and riffle, the stream once humiliated him. It said "no" when he tried to bring the cookhouse wanigan to anchor alongside the bunkhouse float.

Down the river about a mile he tried again at the next possible landing. One of his five-man crew jumped into the water near shore with the end of a 150-foot tie rope. But he couldn't get it snubbed to a tree in time. Another mile or so a second man jumped out, tried again. Another

After pulling the key log in jam, crew scoots away in fast-moving motor boat





River pigs kick a log into current. Note rope tied to man farthest out in river

ing into a tough center jam. A traffic cop had to come in to straighten things out.

Bridges are usually lined with spectators when the wanigans sweep under. Around 200 were leaning over the railings on one bridge a Sunday afternoon on the 1949 drive. At almost the same hour the next afternoon the Clearwater, fast-rising and furious, swept half of that bridge downstream. Bridges sometimes are hazards to the wanigans, too. On one drive the river rose so fast the wanigans couldn't get under one, had to park until the river dropped.

In the interest of safety for the men and to speed up the drive, Potlatch Forests sends blasting crews and their biggest bulldozers out in the fall to work down danger spots. Rocks

that cause jams are blasted out in the fall and winter, when the river is low. Gravel bars and sand necks that catch logs are bulldozed away. This must be done yearly, for the big river constantly is changing its complexion.

Even with all the blasting and bulldozing, the Clearwater has its permanent danger spots. Always will. River loggers take every precaution around such well-known hazards as Little Canyon, Jump Off Joe Riffle, Butterfly Chutes, Devil's Kitchen rapids, Benton Creek rapids, or Big Eddy.

Puffing his pipe and looking back over 40 years of river logging on a dozen or more Northwest and Canadian streams, Bill Aiken casts his vote for Big Eddy as the trickiest spot on the river. Some drive veterans do not

agree. Little Canyon would give it a good run in the balloting.

Little Canyon isn't very long—just a few hundred yards—but in that stretch the Clearwater concentrates all of its thunder in a bottleneck not much more than three times the width of a wanigan. All of Aiken's skill as a wanigan pilot is needed to hit it just right.

"Biggest omelet you ever saw," chuckled Cook Spears as he told of his last ride through that canyon. A wave crashed into the cookhouse, caving in one side and soaking the lower bunks. Four cases of eggs went a-flying. After making the monster omelet on the wanigan floor the river very accommodatingly washed it away.

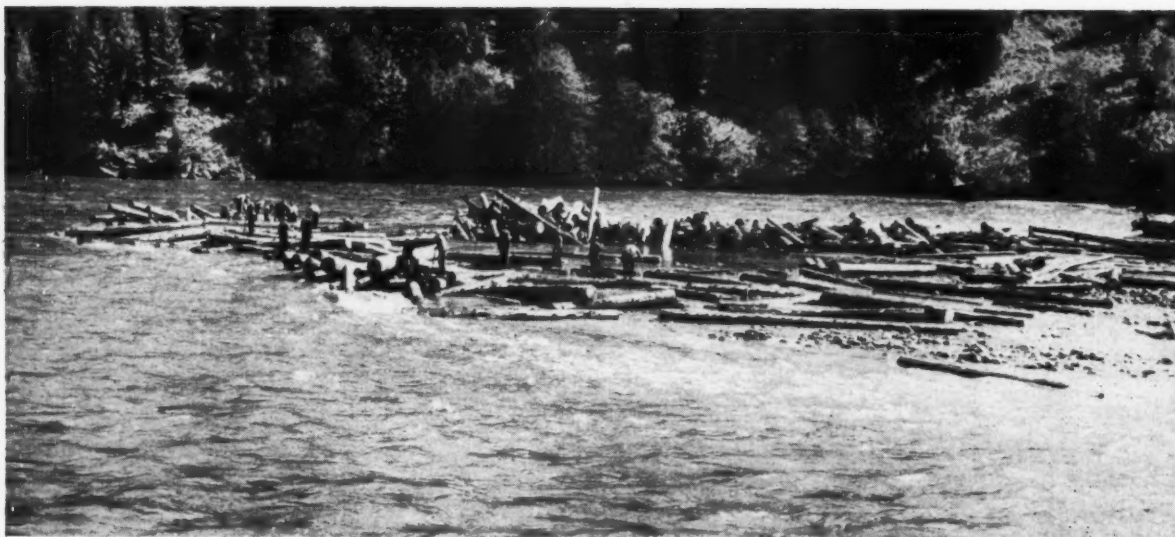
On one drive the wanigan got



Wanigan secured, hungry loggers wait for cook to yell "come and get it"



Cook Harvey Spear's flapjacks are "must" on the breakfast menu



Jams, most frequent when the river starts to drop, cost time and money



Water in which men are wading has just run off from snow fields, and brother, it's cold

caught in a whirlpool at the lower end of Little Canyon. Around and around it spun, like a top. Taking a tie rope, the power boat—a batteaux with one end squared off for a 22 horsepower outboard — was almost swamped trying to pull it out. The wanigan kept spinning until a long rope was gotten ashore to the loggers who hauled their beloved cookhouse to safety.

One by one the picturesque log drives that marked the westward march of logging have given way to trucks. Trucking is more dependable and cheaper, say lumbermen. With

roads criss-crossing most forests, their mills need not wait for spring floods for logs. Out in a big hunk of the Idaho white pine forests, however, the Clearwater still can underbid trucks in log transportation; in all years, that is, but those when the river gets downright ornery.

Thus it appears that the famous river tied in with the Lewis and Clark discovery jaunt may hold out for some time as the last stand of the white water logger, for it cuts through a lot of wonderful timber country mighty shy on roads.

Bridges along the Clearwater can always be counted on to hold up some of the sawlogs



YOUR SHADE TREES



... Let Us Spray

By R. R. FENSKA

IN the March issue ("Don't Give the Bugs a Chance") we discussed the general problem of tree pests and their control, including both "balance in nature" and biological control. When it comes to city trees we usually find them growing under conditions quite different from the forest type, also more susceptible to insect and disease attacks.

Such attacks, however, can be controlled more quickly by artificial means. While one defoliation by insects will not usually kill a tree, three successive defoliations will so devitalize it that it succumbs to any one or more of the numerous pests found in the region.

To help the home owner or amateur horticulturist know what spray materials used as insecticides and fungicides will control the prevailing and more common types of pests the following list has been prepared:

DDT. This is a paralyzing agent which affects the nervous system of certain insects, but why some pests are immune to this material is still a mystery. It is thought that the insect is affected when it walks over any surface which has been sprayed with a solution containing DDT. It picks up the DDT with its feet, body or through the mouth. In 15 minutes to two hours, depending on the type of insect, the paralysis is complete and the insect is dead.

There are also indications that fungus growth may actually be encouraged by DDT applications where weather conditions are favorable. We don't know definitely. Furthermore, its effect on human beings is not fully understood as yet. Caution is the watchword. For instance, do not spray against a wind when your face is not protected. A case has been re-

Mr. Fenska, conductor of this series, is author of the well-known *Tree Experts Manual*, now being revised for third printing.

ported where a gardener's eyelids were temporarily paralyzed under such circumstances.

Arsenate of Lead (a stomach poison). Use as a foliage spray for control of cankerworms (inch-worms), elm leaf beetle, Japanese beetle, gypsy moth, codding moth, catalpa sphinx moth, hickory horned devil, larch-case bearer, apple and plum curculio, apple maggot, bud moths, tent caterpillar, fall webworm, saw flies, tussock moth and brown tail moth.

Nicotine Sulfate (a contact spray):

must hit the insect). Spray only when the insect is on the tree. Will control sucking insects such as aphids, red spider mites, lace bugs, oyster shell scale, beech scale, mealy bug, bark louse, gall aphids, juniper scale, magnolia scale, cottony maple scale, white fly, pear thrips, pear psylla, pine needle scale, pine mite, spruce mite and spruce bud scale.

Oil Emulsion or Miscible Oils (a contact spray). Use as a dormant spray, i.e., early in Spring before new foliage appears. Will control sucking insects. For evergreens it must be used not more than half the usual strength for deciduous trees. It cannot be used due to injury to the bark and the twigs on the following trees:

(Turn to page 49)

STANDARD SPRAY FORMULAE

DDT (50% wettable).....	2 lbs.	Or	2 teasp.
Sticker & Spreader.....	1/2 "		1 "
Water.....	100 gals.		1 gal.
Arsenate of Lead.....	6 lbs.	Or	6 teasp.
Sticker & Spreader.....	1/2 "		1 "
Water.....	100 gals.		1 gal.
Nicotine Sulfate.....	1 pint	Or	1/2 teasp.
Soap Flakes.....	7 lbs.		7 "
Water.....	100 gals.		1 gal.
Miscible Oil.....	2 gals.	Or	5 teasp.
Nicotine Sulfate.....	1 pint		1/2 "
Water.....	100 gals.		1 gal.
Pyrethrum.....	1 quart	Or	1 teasp.
Crystal potassium oleate.....	2 "		2 1/2 "
Water.....	100 gals.		1 gal.
Rotenone (4%).....	4 lbs.	Or	5 teasp.
Rosin Residue Emulsion (#).....	3 pints		1 "
Water.....	100 gals.		1 gal.
Lime Sulfur (dry).....	6 lbs.	Or	6 teasp.
Water.....	100 gals.		1 gal.
Bordeaux Mixture.....	16 lbs.	Or	10 teasp.
Water.....	100 gals.		1 gal.
Sulfur (wettable).....	10 lbs.	Or	10 teasp.
Water.....	100 gals.		1 gal.

(#) Directions for preparing this emulsion are given in U. S. Dept. Agri. Cir. No. 237, Revised 1936.



Cities Service Oil Company photos

Prime white ash logs are assembled in clearings, first stop on long journey to baseball parks throughout nation



White Ash, Sultan of Swat

The best bats in baseball come from trees grown in the traditional oil country of northwest Pennsylvania

AS sure a sign of spring as the robin's return is the resounding whack of wood on horsehide, unmistakable herald of the season and music to the ears of baseball fans the nation over. And by the time the first fence-rattling hit caroms off the bat of Ralph Kiner, Yogi Berra or some unsung youngster aspiring to the big time the fancy of millions will have turned to thoughts and talk of the national pastime. How will the Yankees fare without the great Joe Dimaggio? What about the Dodgers? How goes spring training? Who will be the best hitters?

Maybe the fans in the oil country of northwestern Pennsylvania don't have all the answers, but they can tell you without batting (pardon the pun) an eyelash which will be the outstanding hitters of the 1952 season. They'll be bats produced from the prime white ash grown in and around Warren County, Pennsylvania, adjacent to where Edwin L. Drake drilled the world's first artesian oil well in 1859.

Because of their lightness, high tensile strength and resiliency, these by-products of the petroleum fields are favorites from the big leagues to the sandlots. When a slugger is said to be handy "with the willow," he more than likely is adept at wielding a bat made from white ash, for the bats used by virtually all professional baseball players are from this tree.

It took a number of decades for baseball players to get around to precision-made white ash bats. In the first years of the game any crude club served as a bat so long as it would temporarily withstand the shattering effects of a collision with the village southpaw's "high, hard one." Later it was found that hickory made fairly good bats, but more experience proved white ash best of all.

Warren County, on the rim of the richly wooded Allegheny Mountains, lies astride the nation's best white ash growing belt, a strip which extends from central Indiana across Ohio into Pennsylvania and southern New York. Centuries ago nature deposited a large amount of oil there. It is oil production that long has been the primary industry of this section, but the production of wood for baseball bats is rapidly assuming major proportions.

The prime white ash trees are being timbered on and around the oil properties. On the ridge tops and exposed northern and eastern slopes of the mountains and hills, the white ash attains a healthy and heavy growth. The soil is rich, holds just enough moisture for a uniform and moderately fast year-by-year growth. The trees are straight, the grain is perfection, and endowed with strength and durability.

Of the four and a half million bats of all grades produced annually in the U.S., about one-third (a high percentage of which are top grade) come from the Warren County region.

White ash trees from 11 to 12 inches in diameter produce the best bat wood. The logs are cut into 42-inch lengths, then split into pie-shaped wedges which are turned into billets three inches in diameter. The weight of the finished billet determines the model of bat to be made from it, with the lighter weights going to the larger bats.

Leading producers of bat billets in the Warren County area are three men named Norton, all unrelated.

Pioneer in the field is Gilbert I. Norton, president of the Norton Wood Products Company of Tidioute, Pennsylvania. Though the Norton name has long been associated with

Pennsylvania lumbering, it was not until about 20 years ago that it became identified with bat production. Now the Norton company is the world's largest producer of high quality white ash for bats and all of it is sold to Hillerich & Bradsby, Louisville, Kentucky, manufacturers of the famous Louisville Slugger bats.

The Larimer-Norton Company in Akeley, Pennsylvania, run by Irvin Norton, produces a large quantity of bat stocks for the McLaughlin & Mil-



Oil and timber operations are carried on simultaneously on some properties

lard bat manufacturing company of Dolgeville, New York, America's second ranking bat making concern. The Norton trio is rounded out by C. B. Norton of Little Valley, Pennsylvania, who sells to both major bat manufacturers, as do a number of smaller producers in the Warren County region.

Perfection is the aim, and at least half the labor costs involved are in inspection operations before the billets are shipped to the manufacturer at Louisville. Upon arrival at the factory, the billets are again inspected and then stored for an air-drying treatment for 12 months or more. This takes away the moisture, lightens the weight and strengthens the bat.

Finally, the bat is put on a lathe where it is shaped according to the designs of the many star-named models. A signature of a Stan Musial or Larry Doby is stamped on the bat, a coat of shellac is applied and it is ready to make history, equally capable of smashing a game-winning homerun or whooshing the air in a futile strike.



Skilled mechanic operates machine which turns log wedges into three-inch billets for shipment to bat manufacturers



Since only the best will do, every billet must undergo a critical inspection before it is shipped to the factory

Pop's

SON-IN-LAW

By FRANCIS H. AMES



Lost! Woods-wise John Harmon thought

he had a chance alone, but what about the

citified weakling his only daughter wanted to marry?

THEY were lost. The realization brought a slowly rising panic to John Harmon. It took him by the throat, shook him, left him weak. He found himself swallowing to relieve the dryness of his throat, wetting his lips nervously. He glanced at his young companion, Dudley Price, not wanting Price to know. He mustn't know, Harmon thought. If he knew he'd go to pieces on me.

John Harmon had never been lost before. The thought of being lost now, in this wild, utterly forgotten wilderness of the Tillamook Burn, with its fire blackened, seared remnants of forest, its tangle of shoulder high fern, vine maple and buck brush, its fog shrouded vastness, brought a wry twist to his lips. It was so damned ironic.

But it was comical in a way. He had planned it so carefully, chosen

the wildest, most rugged country that he knew of, to show young Price up for the weakling that he was, to prove to Marge that he wouldn't be a fit husband for her. And now he was lost and would have to keep the fact from Price for as long as he could. He'd have to get young Price out of here alive.

Marge had said, "Dudley wants to marry me, Dad. He's the nicest boy I ever met."

It had surprised Harmon when Marge had been so determined about this. Always before she had taken his advice. Marge was only 19 and there had been so many other suitors for her to choose from, boys that had hunted and fished from the Nestucca to the piney woods.

This was a thing that you can't explain to a woman. All of his life a man with one child, a daughter, hun-

gers for a son-in-law to side him, to go hunting and fishing with him. He wants one that can toss a buck on his shoulder and lug it out of the brush. It isn't that, exactly, that counts so much. It's what it means in other ways. A father can trust his daughter's future to such a man, knowing that the strength is there, the stamina, the will to bull through, to stand as a sturdy shield between his daughter and the buffets of life. And now this Dudley Price was the fair haired boy for Marge.

Harmon looked at Dudley and he said, "We'd best shove on if we're going to get any fishing today."

Harmon was a big man, wide spanned in his fishing jacket, with a predatory nose, craggy jaw, sharp, grey eyes peering from beneath bushy brows. He was a man's man, he liked to tell himself, a successful business

man, a rugged outdoorsman. He didn't want a panty-waist son-in-law that had never been off city sidewalks.

He ventured a glance at Dudley as they moved on. Price was slim, about 21 years old, with mild blue eyes, cheeks that appeared to have been shaved about twice, mouth a mite too wide, large ears that flared. He lacked a full four inches of Harmon's six foot height. The bracken fern came almost to his chin. He was looking about now with the pleased interest of a child, looking at the steep hillsides that hemmed them in, ghostly and unreal in the pea soup fog that had so suddenly come down on them.

"Don't move, Pop," Dudley said. "There's a little baby deer watching us from the brush. Don't frighten it."

A little baby deer. Now ain't that nice. Harmon's lips curled. You fool, he thought, don't you realize that we're lost, that we've in some idiotic way topped the divide, and are headed down into the Trask river country. Don't you know that I don't dare try to turn back, without land marks in this fog, that I don't know which way to turn back. Our only chance is to follow running water down, hit the headwaters of the Trask, follow it to the sea.

Don't you realize that if I had a real man with me that we might have a chance to make it, swimming through white water canyons. We'd starve and we'd half freeze, but we'd come out alive, God willing. And you talk of baby deer. They are so cute. You'll be trying to run one down with your belly rumbling from its emptiness before you're done with this.

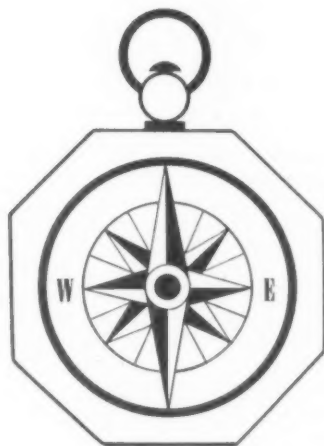
Harmon had been thinking and he had it all planned. They'd go down hill and soon they'd strike running water, maybe just a spring. They'd follow it down until it became a creek, then a brawling stream, finally the Trask river itself. He'd get Dudley to fishing, keep him interested, so he wouldn't notice, wouldn't suspect anything. He'd shove him along as he tried to teach him angling tricks, until finally the time came that he'd have to know.

He'd have to know, of course, sooner or later, but Harmon wanted to postpone the moment as long as possible. After that—Harmon didn't like to think about it. The kid would cave in. I'll probably have to slap hell out of him, make him fear me more than he fears being lost. I'll drive him, drag him down to civilization. It's going to take at least two days—

maybe three nights out, if we make it.

"I'm afraid," Dudley said, and he smiled, "that I won't be much good at fishing, Pop. I've never had a chance to try it before."

That's a part of it, Harmon thought. Hell, I was fishing before I could spit. A willow pole and a can of worms, a bent pin, down at the mill hole. What's the world coming to when a man's daughter is exposed to fellows like this. Harmon wished that the kid wouldn't call him "Pop." It was a thing that rankled him. He'd always wanted a son, yet a son was something that had been denied him. Long ago he had realized that he would have to settle for a son-in-law. He'd looked forward to the day. What right did Dudley Price have to call him "Pop"?



They went down, fighting the brush, with Harmon leading the way. There was down timber in the ferns, and long stringers of blackberry vine. Harmon stumbled, fell flat on his face. Dudley grasped his arm, helped him up, his thin face showing concern.

"Hurt yourself, Pop?" he inquired solicitously.

"Of course not," Harmon was gruff. The nerve of the kid, he thought. Here I am, trying to save the idiot's life, and he asks me if I hurt myself, falling over a blackberry bramble.

There was water in the bottom, a thin trickle. It was June, yet June does not mean summer in the Tillamook Burn country. A man never tried to fish in here before June. The streams were high and snow water turbulent in June, and the fogs still rolled in from the Pacific, 50 miles to

the west, scented with salt and kelp, damp with the wild smell of the forest. There were wolves and cougar and bear in here.

Harmon found himself wondering what Dudley Price would do if suddenly faced by a bear, with a cougar's scream in the night, huddled under a bank overhang without fire or blankets. He doesn't smoke, Harmon thought, and neither do I now—the doctor made me cut it out. If it had been fall, deer hunting, I'd have had matches. This was to be but a fishing trip, a two mile jaunt from the car at the end of the logging road trace. There won't be a fire tonight.

The trickle was a rill now. Within half a mile it grew into a brawling creek. Further down it was joined by another creek. It began to sing a fisherman's song. Harmon could see riffles that eddied under logs, dark pockets where a man yearned to toss a fly. Dudley Price looked at them too, and it seemed to Harmon that his out-flaring ears wiggled.

"Couldn't we fish here, Pop," he inquired. "I don't know anything about it, but it seems to me . . ."

Harmon strung his rod, showed Dudley how to rig the one he'd lent him. He talked as he worked, explaining carefully, trying not to think of what lay ahead.

"Push the ferrules straight together. Don't twist on them or you'll strain the fibre. Be sure you get the line through all the guides—nothing makes a man madder at himself than to get all rigged and find the line out of a couple of guides. This leader's only a pound, so if you hook into something don't yank — flick your wrist. It takes practice, but you'll get on to it finally. We'll use black gnats for a starter — nothing like black gnats to test out a new water."

Dudley was listening, his face interested. He took the rigged rod and he waggled it experimentally.

"I've always wanted to try this," he said.

Then why the devil haven't you, Harmon thought. A man who hasn't got the bottom to get out and try what he wants to try isn't fit to marry my daughter. Marge could take that rod and give me a run for my money. By the time you get out of this a man won't be able to drag you two feet from cement. Marge won't like that. The thought brought Harmon an inner satisfaction. It was, indeed, a poor wind that blew no good whatever. It had been Marge who had insisted that Harmon take Dudley out, show him the ropes.

They moved down the way, forced

by the brush to hug the stream. Harmon roll cast a black gnat out on a riffle, watched it dance down to where the current surged under a snag, and the water boiled. He set the hook deftly, with a skill earned from 30 years of practice—the trout was well hooked. It went out of the water in an end over and jump, gills extended. Harmon played it carefully, aware of the younger man's eyes, scooped it up in his landing net, a ten inch coastal cutthroat, dark from the shade of the brush, black spotted and crimson gilled.

He started to remove the hook, release the fish as was his habit, and then he thrust a thumb in the mouth, broke the neck with one clean heave of his shoulders. A man could eat raw fish in a pinch. Maybe below, in the big water, they couldn't raise any. Maybe by that time their rods would be broken and abandoned in the scramble for life. He looked up to see the admiration in Dudley's eyes.

stream was a small river now, bellowing in the steep sided canyon that locked them in a downy, smothering blanket of fog. The kid was eager as a bird dog, his nostrils flaring, his thin features alight with excitement.

"This is fun," he said, as he put his fly out awkwardly, watching it float, half drowned, lifted his tip at the strike.

"I got one!" his voice was high and piping.

It's fun now, Harmon thought, but wait until you know. Wait until the night comes down in these canyons and you haven't got a roof over your head, until the realization hits you that you don't know where you are, that you may never get out. Then you'll shrivel up inside and your face will twist with the fear that will be in you. All we'll have then is what lies inside of me. That's all that will stand between us and the end of the world. What would it be like if it weren't you and me. What if it were you and my daughter.

Harmon shivered at the thought, looking up into the grey fog, knowing that it was getting late. There was a somberness in the atmosphere, a new wildness in the sullen roar of the water. The time had passed quickly—too quickly—teaching a green kid how to fish, hooking him to his first trout. Always Harmon had dreamed of teaching a son-in-law, a rugged, broad shouldered youngster, with a rocky jaw and a tough beard.

Dudley hung his next cast in a vine maple that leaned over the water. He broke the leader as he tried to yank it free.

"Let it go," Harmon said shortly. "It doesn't matter." His mind was fully on their problem now.

"I'll get it," Dudley said, and he crawled out on the branch.

The bush bent, broke at the crotch, and the fisherman was in the shallow riffle, sprawled flat on his chest. He rabbited out with a startled look in his eyes.

"It's cold," he said. "You wouldn't think that it would be so cold in June."

You wouldn't, Harmon thought. A nice thing. Now he's wet and his boots are full. He'll have blisters on his heels in half a mile. That's the way it will be from here on out—if we get out. He hasn't got any judgment, not a brain in his head. I'll have to watch him like a two year old kid.

"Get those boots off," Harmon's voice was gruff, urgent. "Wring out your socks. Make sure there isn't any sand or grit left in them. We've got

a long way to hike before we get out of here."

I wonder, Harmon thought, how long it will be before he gets wise. Maybe it won't be until after dark. Maybe before it happens I can get him down to the main Trask, started toward the ocean. He won't be so frightened if I can say that all we have to do is to stick to one river, straight down until we come out on the dairy lands. I won't tell him about the canyons, the white water, that we'll have to float through on logs—if there are any logs. I'll laugh and make believe it is a good joke on us. I'll kid him along as far as I can—then I'll boot him along. He isn't going to get Marge, but I must get him out safe.

It occurred to Harmon that he must get himself out in one piece, too. The thought knotted his stomach. He recalled men who had been lost in here in the past, remembering the newspaper headlines, the scare heads, the planes that circled, looking for a moving dot that couldn't be found, the sheriff's posse searching endlessly, the skeletons in the woods, found perhaps by a wandering timber cruiser, a year later, two years later . . . never.

"It's a long way out," Harmon said, "and it's near night."

Dudley was wringing out his socks. "Not so far," he said, "the way I figure."

Harmon looked at him, his bushy eyebrows drawn down, his jaw out-thrust.

"No?" he queried softly. "You think not? Which way would you start. Suppose I wasn't here; that it was you and Marge. Which way would you go?"

Dudley hung the socks on a branch. He looked at his wrist watch.

"It's a stiff climb," he said, "up the side of this canyon, to the left. From there I figure it's about two miles, maybe a little less, back to the car. I guess we'd better start before it gets dark."

Harmon was still, squatted there beside the stream, looking up at Dudley.

"Hell, kid," he said, "you don't know which way is up."

An apologetic look came into Dudley's eyes now.

"I guess I don't, Pop," he said, "but I been figuring on it. I've never had any time or money, like other kids, to go fishing or hunting, busting around in the brush. I had to work my way through school. Father died when I was a baby and mother had a tough time. But I always knew that

(Turn to page 28)



"Gosh," he said, "the way you laid out that fly. I've read about it in magazines. Show me how, Pop."

Harmon tried to show him how, and he could see that the kid had read about it. He knew the principles.

"This is close quarter work, with brush at your back. Lift that tip high, hold the butt up and away from your body. Now bring it down and up again in a circular motion—roll that line out. Watch it now—keep that tip up, don't drown that fly. Ah, a strike!"

Dudley had one on. A fat one, pinwheeling across the riffle in that first frenzy of feeling the hook, boring deep, shooting back to jump at the angler's feet.

"A tight line! Damn it man, keep that line tight. You lost him."

That's the way it went as they worked their way down, hurrying on, never pausing long, with that fear gnawing at Harmon's insides. The



MANAGING YOUR WOODLAND

... *In the Appalachians*

Thinning Hardwood Timber Stands

By H. D. BENNETT

THE Appalachian Hardwood Region is a mountainous area, embracing all or portions of eight states, extending from Pennsylvania to northern Georgia. The entire region is within the Southern Appalachian Mountain system which embraces some 28 million acres of forest land. About half of this area is in what is called small woodland ownership.

Several pulp and paper mills using hardwood as a raw material are located on the edge of the area, while one-fourth of the hardwood lumber is still produced by large band mills. Many smaller circular mills are active throughout the area producing lumber and mine timber. With such an opportunity for utilization of nearly all types of timber and forest products, opportunities for the practice of sound economic forestry are good.

A properly equipped sawmill, with a well-balanced mill and woods crew can make excellent utilization of nearly everything that is brought out of the woods. Headers, wedges, ties, props and so forth are in good demand within the zone of influence of the coal mines. Well sawn lumber can find a ready market in the trade.

Our forestry practices in many of the more accessible timber stands can therefore be intensive and profitable. Good forestry requires that an efficient logger be assured of an economic operation, and that adequate provision be made for continuous production of good quality trees of desirable species.

The first commercial operation that can profitably be performed in a stand of hardwood timber is a thinning when the trees are four to eight inches in diameter. The products from such an operation in this region, can be either mine props or pulpwood, depending upon the species of

trees involved, the selling price of the material and the available markets.

A thinning is not only good for a timber stand in that growing conditions are improved, but it gives the landowner an opportunity to realize a return from the land while his trees are growing to maturity. Many of us have heard the statement that "Nature is an excellent thinner." This is to an extent true, but Nature knows only two laws—maximum production and survival of the fittest. By these she thins the stand, leaving the less hardy trees to fall by the wayside.

Allowing Nature thus to take its course has two disadvantages. First, the "fittest" by Nature's yardstick may not always be the "fittest" from a utilization and market value standpoint. Second, the trees that die in the process are not utilized. Thinning the stand by cutting out the crowding and undesirable trees, makes better growing conditions for the trees we leave, and also utilizes the trees cut. Before starting on a thinning operation on your woodlands, you should first study the available markets for

the products and carry out the operation accordingly.

In the thinning operation itself, several types of trees, growth conditions, species and general nature of the stand must be considered.

1.) Types of trees by their position in the crown:

Dominant—Having its crown above the general level of the stand and receiving direct top and side sunlight;

Codominant—Having its crown in the general level of the stand receiving direct top light and limited direct side light;

Intermediate—Having its crown below the general level of the stand but above the reproduction and receiving no direct sunlight.

Suppressed—Having its crown below the general level of the stand but above the reproduction and receiving no direct sunlight.

2.) Types of trees by their physical conditions:

Potential crop trees—Tall, usually dominant or codominant straight thrifty well-formed trees of desirable species, some of which will form the

(Turn to page 34)

Good utilization—crew making mine props from tops of trees cut during a thinning operation



GALLERY ON THE SQUARE



All of Vermont's vivid outdoors is the studio of self-taught artist Cecil V. Grant, and his "shop" is the Manchester green

TWO men stand on the village green at Manchester, Vermont. The townspeople are proud of both of them.

The younger chap, in the uniform of a Revolutionary War soldier, poses in granite on a pedestal. At his feet are listed the names of other Green Mountain Boys whose courage and initiative won victories against heavy odds.

The older man, 70 now, is Cecil V. Grant, an artist. In visored cap, casual sweater, and everyday trousers he stands before his own signature on truly vivid oil paintings.

His courage overcame disaster in the stock market crash of 1929. Broke, he moved his family into a mountain farmhouse, their former warm weather home. Through the rigors of a Vermont winter he turned his hobby of painting into a means of livelihood. With no funds for a salesroom, initiative led him to the Manchester square.

Some tourists may think it a cheap show, humbly displayed. But true

By EDITH TALLANT

nature lovers know better. Among these are some famous Vermonters.

On the covers of the Saturday Evening Post, Norman Rockwell is introducing America to his good neighbors round and about Manchester. In her novels Dorothy Canfield Fisher makes readers intimately acquainted with this New England paradise. Robert Frost in inspired down-to-earth verse peers into the hearts of his fellow Vermonters. He invites his readers to visit with him the spring to be cleaned, the newly-born calf, the wall to be mended, the woods lovely, dark and deep.

Simply and vividly also Cecil V. Grant is putting on canvas these same fields and walls. By necessity he is self-taught, but his love for these mountain-rimmed valleys has tutored him well.

Literally down to the earth which has inspired them, he stands his paintings on Manchester square. Their simple frames are broadened

by green grass, marble sidewalks and white colonial homes. Ethan Allen on his lofty pedestal quietly ignores them all. Ethan took no time for art. But others do.

One summer day, a wealthy dowager resting on the veranda of the swank Equinox Hotel across the way told her chauffeur, "Move the cars so I can get a good view of that largest oil painting, the one with the red barn in the snowstorm. Ask the artist, I suppose that's the artist, the oldish man in the dark glasses and cap. What does he want for it?"

Cecil Grant read the price penciled on the wooden frame.

The tourist sent her check across. Presently she carried off to some steam heated city residence a breath of Vermont's stimulating winter.

A country teacher stopped her small coupé. She yearned over a small landscape of a covered bridge quiet and weathered above a dashing mountain stream. "I love it! I must have it! How much is it?"

Cecil Grant had not raised his

price for the snow scene, but he lowered this one.

"Here's my Ohio address. Can you hold it for me till pay day? I'm simply crazy about this mountain scenery. How wonderful that you can send it all over the world for us all to enjoy!"

She sent her check and received her picture.

Not all tourists are as considerate. Many a painting remains unclaimed, unsold.

To claim a snow scene which Cecil Grant was holding for me I drove across Big Bromley Mountain in search of his home. Cloud and rain blurred the far view, but signs along Route 11 directed to invisible ski runs, lodges for skiers and an idle Snow Valley.

A sign of a different kind, a painted landscape, stopped me before a low white farmhouse. Square and with a wing and a woodpile, it is like other Green Mountain homes. And Cecil Grant like other Green Mountaineers was carrying in a log of white birch.

Once through the kitchen, the most-used entrance to farmhouses the world over, he led me and a wildly barking cocker spaniel into a library quite different from the typical Vermont parlor.

At his wife's request he dropped the birch chunk onto the open fire. Sudden light flared over worn Oriental rugs, antique furniture and—the paintings.

"On a stormy day you have all the beauty of the country safe inside this house. It's perfect!" I exclaimed as Mr. Grant drew a chair for me nearer the fire.

Lovely Mrs. Grant smiled proudly. "And yet Cecil is never satisfied with his work." She arranged tea service on a low table before the couch on which she, Miss Blue the cocker, and her husband sat opposite me.

"It's, well, it's a haven from the storm, isn't it?" At no comment from Mr. Grant I hastened to add, "Or does that sound too poetic, er, exaggerated?"

"Not at all," answered Mrs. Grant. "Our little girl, the cold, no conveniences, made living up here hard at first, but Cecil..."

"Painting is fun," interrupted her husband. "Earns a living. The more I paint the easier it becomes. I see a bit of landscape that pleases me. Get it down on canvas in one sitting."

"Do you do historical places? Like Ethan Allen's barn below Manchester there?" I asked.

"No," snorted Cecil Grant. "I'd much rather paint what inspires me." The tea cup he was passing me rattled on its saucer. "But there's a demand for these lovely old barns and vanishing covered bridges."

"Are any one lot of people, teachers, perhaps, your best customers?" I asked.

"Doctors," he answered. "Guess they want some beauty on their office walls. Something outdoors, you know."

"When did you begin to paint?"

With a laugh Cecil Grant relaxed. He fed a bit of cake to Miss Blue, who was black. "That memory is impressed upon me. I got a good licking. Remember the huge mansard roofed mansions that used to be popular? You see, my father had just had new shades hung at every long window in our New Jersey home. My grandmother had given me some schoolboy watercolors. You can guess. Papa didn't appreciate cattails and swans..."

"What school did you go to? What college?" I asked as I accepted another slab of fruit cake.

"Pingry School, Elizabeth, New Jersey. No college. Much to my father's disappointment. I followed my own bent. Always have."

In the flickering light I had been trying to make out the subject of a huge dark painting hung opposite the fireplace. It's size overpowered Cecil Grant's smaller, brighter pieces.

"It's by Gabriel Metsu," explained my host. "Owned by my French an-



The artist's home, like his pictures, is typical of the Vermont countryside

Many tourists take home a Vermont scene captured on canvas by Grant



cestor, Vezin, back in the 17th century. Now here it hangs, banished to an old Vermont farmhouse."

"So the V in your name is Vezin," I said as I studied his signature on a landscape above the fireplace.

"The Grant ancestors' names are on the Bunker Hill monument," said Mrs. Grant. "Mine were colonists too, the Jaks."

I rose to go. "If you don't think it too personal," I said, "let me tell you that your valor is as great as your pioneer ancestors. Both of you. And greater than Vezin's. He could afford to own a very valuable picture, but you paint them."

Cecil Grant handed me my snow scene in exchange for a check which I felt was much too small. "Thank you," I said. "I'll always see courage in this. I'll remember how you fought the cruelty of a Vermont winter to catch its beauty on this canvas."

Living With Dutch Elm Disease



Connecticut experts contend research and control programs can save the elm. As proof they point to success of such measures taken in their own state

HAS Dutch elm disease really doomed the elms? We and other well informed shade tree authorities in Connecticut do not think so.

Despite a wave of pessimism fostered by the infestation's alarmingly rapid spread and the ominous tenor of some recent nationally circulated magazine articles, we believe the elms can be saved with proper research and control measures—primarily at the community level. We further believe that the present tremendous losses of elms are due in

By **WILLIAM C. SHEPARD**
and **A. W. HURFORD**

large part to misinformation, public apathy and lack of preventive programs.

Connecticut's experience with research and control programs substantiates these beliefs. Losses already have been considerably reduced in some communities. Two outstanding examples are the towns of Greenwich and Stratford where control results have been so successful that the Connecticut story may well serve as a guide for other afflicted states.

(Massachusetts is combating Dutch elm disease in much the same manner as Connecticut. The state Forest and Park Association has put a full-time forester in the field to help towns fight the menace at the local level. Massachusetts, too, is concentrating on research and information measures.)

The earlier failure of the federal government to eradicate or prevent wide spread of the Dutch elm disease, through use of the only methods known at that time, made it evident that research work should continue in Connecticut. The state Agricultural Experiment Station at New Haven was one of the few such stations which initiated and still continues to carry on an aggressive research program. In the last few years its findings have proved that while there is no known cure for the disease, effective steps can be taken to reduce tree losses to a low figure.

Unless broken branches are trimmed, storm-damaged elms fall easy prey to beetles which carry Dutch elm disease



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Controlled field tests have shown that a 12 percent DDT spray thoroughly applied just before the trees leaf out will in large measure control the elm bark beetle, the disease carrier. A six percent DDT spray applied late in June will further control the bark beetle as well as the elm leaf beetle and possibly the cankerworm. The considerable travel by the bark beetle over the smaller branchlets of the tree before settling down to feed in the crotches is conducive to the effectiveness of the DDT spray.

In general the beetle does not fly more than 300 feet, making localized control measures successful in generally infected areas. Only rarely do the pests fly more than a thousand feet unless aided by wind or other agency.

The pressure application of oxyquinoline benzoate solution to soil around elm trees also has reduced incidence of the disease.

Since the elm bark beetle lays its eggs only in newly dead or dying bark, tree sanitation (tree removal, dead and dying branch pruning) has been an effective control measure by reducing localized areas available for breeding. Disposal of infected elm wood or trees by burning or bark removal to reduce beetle population is essential to proper control. A coordinated program of spraying and sanitation is the standard practice, with

(Turn to page 40)



Since elm bark beetle infests only dead or dying bark, piles like this should be burned or sprayed



National Capital Parks Photo
DDT applied by mist blowers before
and after elms leaf repels beetles

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Pop's Son-in-Law

(From page 22)

there'd come a time when I could get out like this. So I read everything about it that I could—you know I take three or four outdoor magazines. That way is north."

He pointed into the fog, a fog that was down to the ground now, darkening above, shutting the roar of the river in like a tent. It wasn't north, but Harmon didn't tell him so. He was thinking about a kid that wanted to go fishing and couldn't, recalling his youth, when he had chores to do, or the corn needed hoeing, when the crappies were biting in the millpond.

"We walked a couple miles due north," Dudley said, and he drew lines in the sand with a twig, "when we first left the car, about three degrees off north, to the east. Then when we struck that big swale we went about a mile due west—that's where the fog came down. After that we cut across through the ferns, about two miles my watch said. I figured we were traveling north, about 25 degrees west. That's where I saw that little deer, remember. Then we started down to the creek to fish. We've been puttering along, I figure about four miles, due south."

"Got it all figured out," Harmon said, and his eyes were still.

"It seems to me," Dudley said, "that if we climb out of this canyon, to the east, we could start east, a little north, and reach the car in about a mile and a half." He laid a compass on the ground.

He was drawing lines on the ground now, a zigzag course that showed a nine mile hike in, doubling back on the last leg, a crazy, meaningless pattern in the sand. Harmon's legs ached.

"How much north of east?" his voice was cautious.

"About 15 degrees," Dudley said, and he looked up at Harmon with his shy, kid's grin. "I bet you think I'm a greenhorn, Pop. You could go out of here blindfolded."

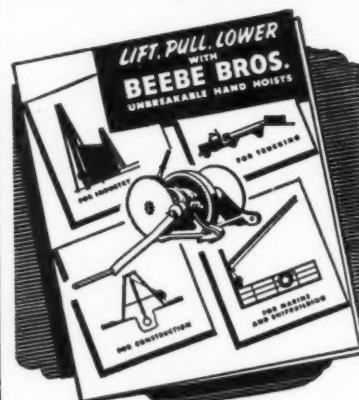
Harmon cleared his throat noisily. "A man has to use a compass," he said, "until he gets to know the ropes. Us old timers . . ."

"Yes," Dudley said. "Maybe Marge and I . . . I wouldn't want to take any chances getting her lost."

"No, Harmon said. "Not Marge." He strained his eyes into the fog, looking at the canyon wall, the one

(Turn to page 30)

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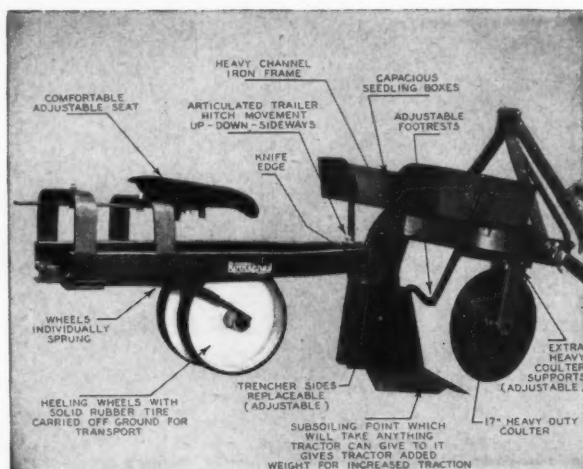
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(shear type)



DURACUT
(saw type)

H. K. PORTER, INC., Somerville 43, Mass.

Pop's Son-in-Law

(From page 23)

that Dudley had indicated as lying east. To Harmon it seemed west, but he'd got a glimpse of that compass as it lay on the ground. How in time did an old hand like himself get turned around this way.

"I figured," he said finally, "that this would be as far as we'd fish. There's a ravine running up the slope here—not too hard to climb."

It was a stiff climb. Harmon was winded when they reached the top. He was glad to halt while Dudley lined his compass out over the bracken, fog shrouded, touched with night. Harmon's knees wobbled by the time they reached the car. These young slickers, studying books—15 degrees north of east.

He drove silently along the dim logging trace, abandoned these many years. A deer bounded through the headlight's gleam.

"This is good deer country," Harmon said finally. "Next fall you and I will come up here and camp out for a few days. Ever hunt deer?"

"No," Dudley said, "but I'd like to. Maybe by next fall Marge and I..."


It would be a lot of fun to break a guy like Dud in on his first deer—take a man back. He found himself wondering how many years it had been since he had actually lugged out a buck on his back. Had he ever done it alone? He couldn't remember. Dud would broaden out a bit as he grew older, maybe...

"We'll bring Marge along, son," Harmon told the young man at his side, "of course." And his eyes gleamed.

New Timber Study Begun

A review of the nation's timber resources, first since the cooperative 1945 appraisal with The American Forestry Association, is being launched by the U. S. Forest Service, according to Chief Lyle F. Watts. The study will require at least two years and will bring up to date information on timber resources, re-analyze prospective requirements, supplies and growth of timber, appraise today's timber conservation programs and chart a course for American forestry.

E. C. Crafts (Program Planning) and W. A. Duerr (Forest Economics) will direct the review.



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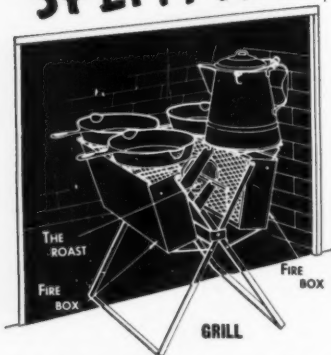
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Sugaring Time

(From page 11)

crisp weather. A warming south wind and the run is over. For that reason, sugar men often work day and night to gather all they can during the short season which rarely lasts more than a month. After that, the spouts are pulled from the trees and stored with the buckets in the sugar shanty for another year.

With increases in population and wealth, maple sugar products have changed from a primitive to a luxury food. The syrup is often called liquid sunshine since the sweetness of the sap often depends on the influence of the sun on the leaves. The more beautiful the crown of the tree, the more sap it is liable to produce. This high concentration of sugar is said to be partly responsible for the brilliant fall coloring of maple foliage.

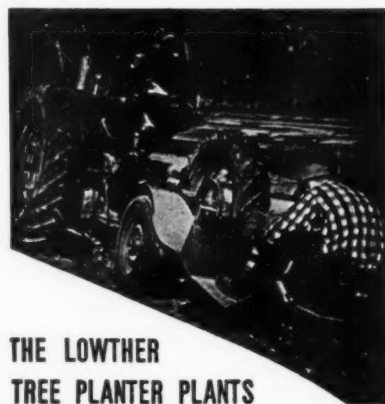
The beautiful stately maple is Vermont's official tree. Its first tapping does not come till its 40th year, and at 80 it is twice as valuable. Many trees are still producing at 200 years. Sap letting gives the maples a matronly, full waisted look from the healings after auger wounds each spring, but it does not otherwise seem to exhaust them.

Maple sugar in its perfection is seldom seen in the markets. That is found only when made in small quantities from the first run of sap. Then it is pure distilled essence of nature, with the smell of freshly cut maple wood making for a wild delicacy that no other sweet can match. The syrup is clear as clover honey, the sugar as pure as wax.

Made in large quantities, it is coarse and dark. It is practically impossible for one farmer to produce grades of syrup which are uniform in flavor and color. There is always uncertainty during the season. Natural causes so affect the supply that neither quantity or quality can be estimated in advance. Sometimes, there's a difference in grade during the same run.

By sending syrup to a processing center, quantity selling can be done on a sliding scale, depending on color and flavor. The lightest colored syrups are placed highest in grades and standards and used for the fine pure candies. Stronger flavored grades are blended with cane sugar and distributed in jugs. That unsuitable for table use is sold to the tobacco compa-

(Turn to page 34)



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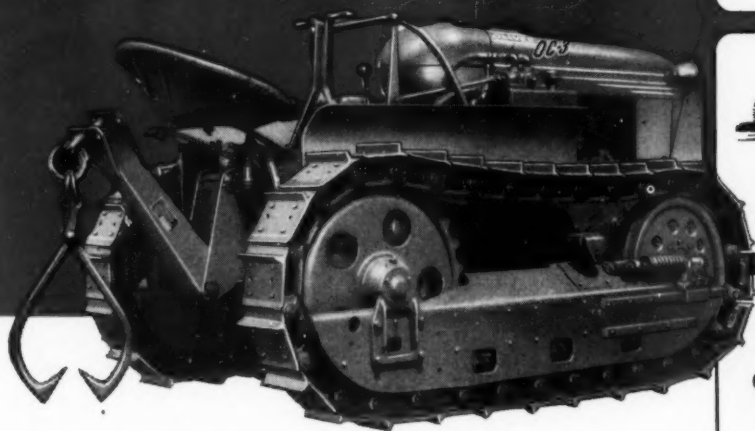
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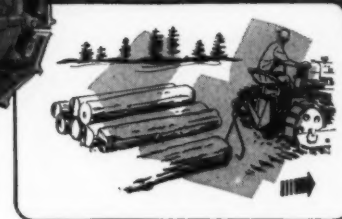
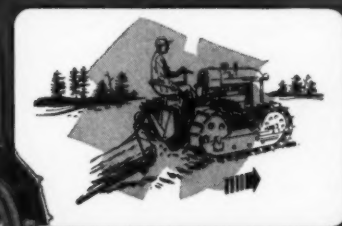
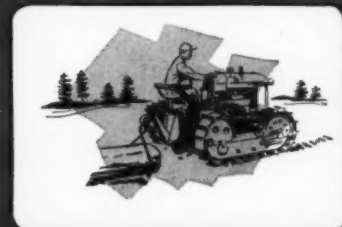
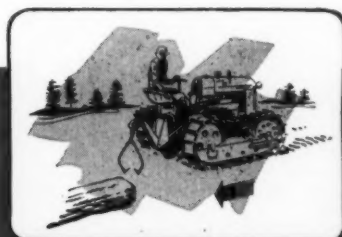
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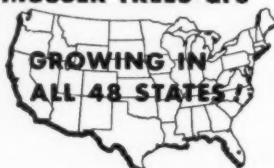
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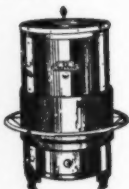
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Sugaring Time

(From page 32)

nies. Thus has the maple sugar industry progressed since iron kettle days.

When the sap run spells goodbye to winter, St. Albans invites everyone to visit the state where the maple roots go down to Green Mountain granite. Townspeople offer some of their best recipes for maple rolls, muffins and cakes. They ask their guests to try maple sweet pickles, candied yams and carrots, maple cream and rice puddings, maple popcorn balls and pralines or to take home a jug of pure maple syrup for pancakes or waffles. As gifts for the folks back home, they offer maple sugar cakes, moulded in fancy shapes in decorative boxes. They know almost everyone will agree that of all the sweets known to man, none is so delicately flavored, so satisfying to the palate as maple sugar.

Woods Management

(From page 23)

future crop of saw logs, mine timbers or whatever the stand is managed to produce;

Trainers—Trees whose crowns are below the general canopy of the stand, which shade the trunks of the potential crop trees, preventing the formation of sucker branches on the crop trees;

Whippers—Tall, spindly, small-crowned trees which have their tops in the codominant level. They are severely whipped by the wind and their motion tends to knock the tips from the branches of the nearby trees;

Wolf trees—Large, usually defective trees which occupy more space in the stand than their growth or value warrants;

Crowders—Trees whose crowns are up among the crop trees but are overcrowding them for growing space.

3.) Types of trees by species: (A classification by desirability of species can only be general since some species are very desirable for one thing and of no value for others. Also desirable species on one site may be undesirable on another. The landowner or operator will have to judge his own needs as to species to be favored. The following classification

(Turn to page 36)

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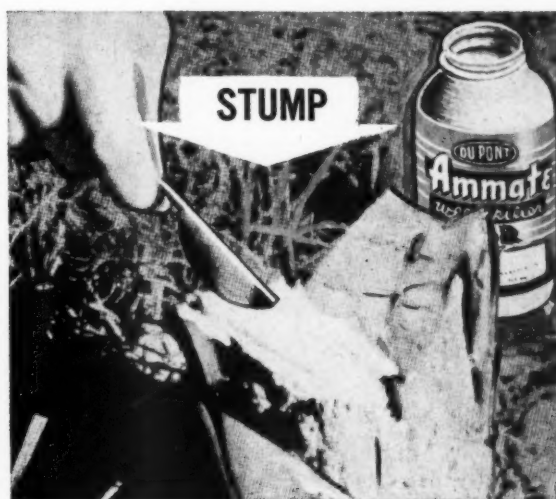
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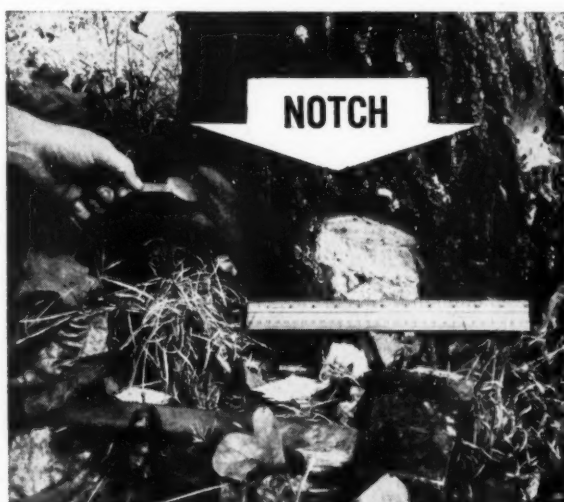
4 Ways to Kill Scrub Trees with Du Pont "Ammate"



1 For large trees, hack overlapping cuts into the sapwood around the trunk. Pour in enough "Ammate" solution (4 lbs. to a gallon of water) to wet the cut surface all around the tree.



3 Cut small trees with a V-shaped stump. Put a tablespoonful of "Ammate" crystals in the V. You can also use "Ammate" on larger stumps to prevent sprouting.



2 On tough trees, chop notches every six inches near the ground. Put a tablespoonful of "Ammate" crystals in each notch. This deadens even blackjack oak with little resprouting.



4 On seedling trees or sprouts, spray the green leaves and stems when they are fully leafed out using "Ammate," $\frac{3}{4}$ lb. per gallon of water. Let trees or sprouts stand a year for best kill.

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You can increase the value of timber growth by killing scrub trees with low-cost "Ammate." Forest owners report it gives valuable pines more sunlight, more water and more room for root and top growth. "Ammate" kills blackjack oak, gum, sassafras, elm, willow, persimmon and other weed trees with little or no resprouting.

Ask for this free booklet: "Improvement of Pine Timber Stands with Du Pont 'Ammate.'" Write to Du Pont, Grasselli Chemicals Dept., 5031 Du Pont Bldg., Wilmington, Del. For supplies of Ammate® ammonium sulfamate weed killer, see the Du Pont distributor in your area.



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High Uinta Wilderness—Ashley National Forest, Utah. One 10-day pioneer expedition—July 29 to August 7. Cost, \$215 from Vernal.

Maroon Bells-Snowmass Wilderness—White River and Gunnison National Forests, Colorado. Two 10-day expeditions—July 31 to August 9 and August 13 to 22. Cost, \$215 from Glenwood Springs.

San Juan Wilderness—San Juan National Forest, Colorado. One 10-day expedition—August 6 to 15. Cost, \$215 from Durango.

Glacier Peak-Lake Chelan Areas, North Cascade Wilderness—Chelan, Mt. Baker and Wenatchee National Forests, Washington. One 13-day expedition—August 11 to 23. Cost, \$215 from Wenatchee.

Cascade Crest-Goat Rocks Wilderness—Gifford Pinchot and Snoqualmie National Forests, Washington. One 13-day expedition—August 11 to 23. Cost, \$215 from Yakima.

Inyo-Kern Wilderness—Inyo and Sequoia National Forests, California. One 13-day expedition—August 26 to September 7. Cost, \$205 from Lone Pine.

Gila Wilderness—Gila National Forest, New Mexico. One 11-day expedition—September 3 to 13. Cost, \$215 from Silver City.

Write or wire for detailed information and reservations.

THE AMERICAN FORESTRY ASSOCIATION

919 Seventeenth Street, N. W.

Washington 6, D. C.

Woods Management

(From page 34)

will be found desirable for general purposes.)

Desirable—Those best suited for their intended use and value, and for the amount of growth they are capable of on a given site. They include black walnut, sugar maple, white ash, white oak, red oak, yellow poplar, basswood, black cherry;

Intermediate—Species having a more or less market value for specialized items or acceptable as substitutes for desirable species. They include yellow birch, red maple, black gum, cucumber, chestnut oak, the pines, hemlock, scarlet, black and pin oak, black locust;

THE OLDEST PLANTATIONS?

The American Forestry Association is interested in collecting data on the oldest forest plantations in the United States for research, demonstration and educational purposes. The Association feels that historical data and pictures of the oldest plantings will provide valuable information and serve as an inspiration to present day planters of trees. State, federal and private foresters and landowners can help materially in searching out and reporting the veteran plantings.

Data, with photographs, should include location of plantation, species, date planted, information on any cutting or yield of products and any other pertinent facts.

The Association also keeps current a record of the Big Tree champions in the United States, nominated through the help of many individuals. Information on the oldest forest plantations should be sent to The American Forestry Association, 919 17th Street, N.W., Washington 6, D. C.

Undesirable—Such species produce a poor quality of wood, are growing out of their range, do not make good growth or are of low value for general use, and include: buckeye, sweet gum, beech, elm, sycamore, hickory, honey locust, dogwood;

Weed trees—In our forest economy for timber production such trees have little or no value. However, many have value as game food, and include sourwood, sassafras, persimmon, magnolia, redbud, Juneberry.

4.) The thinning operation:

If the stand is readily accessible and markets are available for the products, if the growth rate is less

(Turn to page 39)

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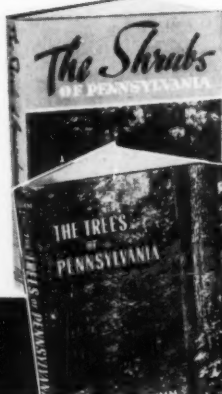
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NEWS IN REVIEW

Forestry Foundation?—Heads of six forestry schools in the south and representatives of the Southern Regional Educational Board have recommended that a regional forestry education foundation be set up to help alleviate a growing shortage of foresters and a shrinking number of forestry students in the area. The foundation would solicit and distribute funds for scholarships to encourage more persons to enter forestry training.

The action was taken by the newly-established Committee on Regional Programs in Forestry Education and Research which was organized under an agreement signed last fall by the presidents of the forestry schools and the director of the regional board.

Schools included were: University of Florida, North Carolina State College, Duke University, Alabama Polytechnic Institute, University of Georgia, and Louisiana State University.

Beetle Losses Drop—Spruce beetle outbreaks, which have been playing havoc with government timberlands in Colorado the last few years, were materially reduced in 1951, reports of the U.S. Department of Agriculture show. An intensified control program, abnormally low temperatures early last year and the influence of woodpeckers were responsible for the decrease, according to the reports.

More than 200,000 trees were sprayed in three Colorado National Forests last summer with a combined orthodichlorobenzene-fuel oil spray.

Surveys by government entomologists indicate another 400,000 trees should be treated this year to minimize the epidemic.

AFPI Report—A decade of progress in practical forest management is measured in the annual report published recently by American Forest Products Industries.

"During the year just ended (1951) forest production was at or near an all-time high in the United States," the report states. "This nation, with less than one-tenth of the earth's forest area, continues to produce more than two-fifths of the world's lumber and woodpulp and well over half of its plywood. Privately owned, tax-paying timberlands, operated under a free forest economy, provided nine-tenths of that wood harvest."

AFPI President James L. Madden, in a statement summarizing the report, says woodland owners are assured a dependable market for their tree crops in the years ahead.

Back to School—It was back to school recently for 43 "students" who attended sessions of the Northeastern Forest Fire Protection Commission at Concord, New Hampshire.

The school, the third to be held in the past year, was attended by representatives of state, federal and private forestry agencies from the six New England states, New York and New Brunswick, Canada. Purpose of the classes was to provide the individual states with a reservoir of trained men who would be ready to organize large groups to combat fires in the event their areas were hit by blazes which would require mutual aid between the states.

Meeting in South—Featuring the progress of southern forestry, committee sessions and talks by outstanding speakers, the Southern Pine Association will hold its annual meeting April 7-9 in New Orleans.

Among the scheduled speakers are: Dr. Arthur A. Smith, widely-known lecturer and writer on economics; Thurman Sensing, executive vice-president of the Southern States Industrial Council, and Arthur A. Hood, editor of *American Lumberman*. Other speakers will discuss forest conservation, lumber procurement, wood recovery at sawmills and additional topics.

Woods Management

(From page 36)

than eight rings per radial inch, if crowns do not have about two feet of space between them and have a spread of less than one and one-half feet for each inch of diameter at breast height, the area is in need of a thinning.

Since a thinning operation is primarily to improve the growing conditions for the potential crop trees, the first step is to select the trees that will make the future crop. Trees should be selected on the basis of markets for sawtimber, mine timber and other uses. Then determine what can be done to improve the growing conditions on the area in general and the potential crop trees in particular. Crop trees should be selected for their position in the crown, the species of the tree, thriftiness and quality.

The cutting operation usually consists of removing crowders, whippers, and wolf trees in such a way that potential crop trees will have a space around the outer edge of their crowns of about two to four feet. This operation will not necessarily produce the final crop trees. Therefore we may include some intermediate species or even some undesirables, if necessary, to maintain a fully stocked stand in the crop trees, planning to remove them on the next cut.

In some instances, trees in the understory of the stand will be found that are not affecting other trees one way or another, but have a current market value. If increased volume of material is needed to make an economic operation of the thinning job, these may be marked for cutting.

The tendency is often to mark too many trees, excessively opening the stand and subjecting the trees too quickly to great exposure. This can be avoided by maintaining the crown-spacing previously mentioned. However, through the removal of some large wolf trees, the crown spacing will be necessarily exceeded.

In selecting crop trees, pure stands should be avoided as far as possible. Selecting a variety of species will assure a more thrifty and healthy stand, less subject to attack from insects and disease.

Thinning is an operation that can be profitable to you and helpful to your timber stands. Put it to work in your young stands. For advice, on the ground, consult your local consulting forester, or farm forester who will be glad to serve you.

Before you buy . . .

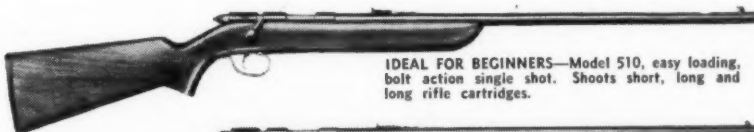


One look inside the handsome Remington "500 Series" 22 rifles will show you why they're such an unbeatable value. For instance, the bolt has two extractors and separate ejector. No chance for stuck cartridge cases!

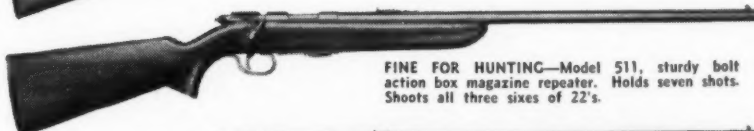
Notice the double locking lugs. They mean years more fun with a Remington . . . maintain correct head spacing for fine accuracy through the years.

The bolt has double cocking cams . . . the smoothest type of bolt action made. Doubly safe, too! Red firing indicator signals when rifle is cocked. Red dot shows when safety is off.

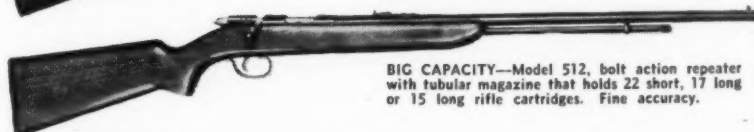
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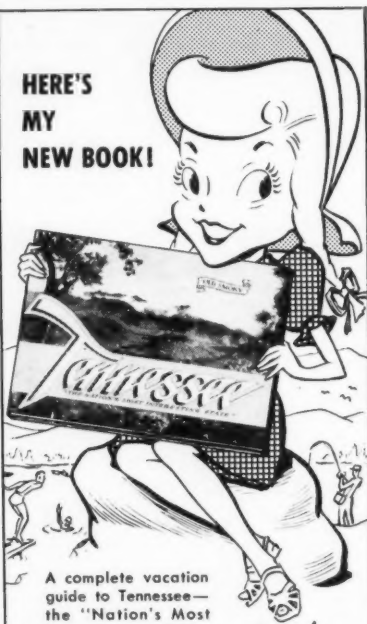


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A complete vacation guide to Tennessee—the "Nation's Most Interesting State". You can have one too.

Just ask for your copy of my new "Silver Book".

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Terry C.*

Division of Information

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Any person or company may become a member of The American Forestry Association upon application. There are five classes of Membership:

Subscribing, per year	\$5
Contributing, per year	10
Sustaining, per year	25
Life (for individuals) no further dues	100
Patron (for individuals) no further dues	1000

All members receive monthly copies of AMERICAN FORESTS Magazine.

NEWS IN REVIEW

Forestry Foundation?—Heads of six forestry schools in the south and representatives of the Southern Regional Educational Board have recommended that a regional forestry education foundation be set up to help alleviate a growing shortage of foresters and a shrinking number of forestry students in the area. The foundation would solicit and distribute funds for scholarships to encourage more persons to enter forestry training.

The action was taken by the newly-established Committee on Regional Programs in Forestry Education and Research which was organized under an agreement signed last fall by the presidents of the forestry schools and the director of the regional board.

Schools included were: University of Florida, North Carolina State College, Duke University, Alabama Polytechnic Institute, University of Georgia, and Louisiana State University.

Beetle Losses Drop—Spruce beetle outbreaks, which have been playing havoc with government timberlands in Colorado the last few years, were materially reduced in 1951, reports of the U.S. Department of Agriculture show. An intensified control program, abnormally low temperatures early last year and the influence of woodpeckers were responsible for the decrease, according to the reports.

More than 200,000 trees were sprayed in three Colorado National Forests last summer with a combined orthodichlorobenzene-fuel oil spray.

Surveys by government entomologists indicate another 400,000 trees should be treated this year to minimize the epidemic.

* * *

AFPI Report—A decade of progress in practical forest management is measured in the annual report published recently by American Forest Products Industries.

"During the year just ended (1951) forest production was at or near an all-time high in the United States," the report states. "This nation, with less than one-tenth of the earth's forest area, continues to produce more than two-fifths of the world's lumber and woodpulp and well over half of its plywood. Privately owned, tax-paying timberlands, operated under a free forest economy, provided nine-tenths of that wood harvest."

AFPI President James L. Madden, in a statement summarizing the report, says woodland owners are assured a dependable market for their tree crops in the years ahead.

* * *

Back to School—It was back to school recently for 43 "students" who attended sessions of the Northeastern Forest Fire Protection Commission at Concord, New Hampshire.

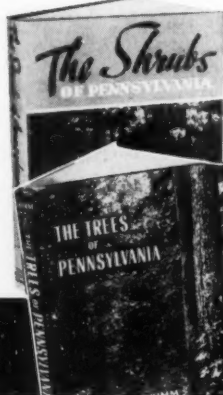
The school, the third to be held in the past year, was attended by representatives of state, federal and private forestry agencies from the six New England states, New York and New Brunswick, Canada. Purpose of the classes was to provide the individual states with a reservoir of trained men who would be ready to organize large groups to combat fires in the event their areas were hit by blazes which would require mutual aid between the states.

* * *

Meeting in South—Featuring the progress of southern forestry, committee sessions and talks by outstanding speakers, the Southern Pine Association will hold its annual meeting April 7-9 in New Orleans.

Among the scheduled speakers are: Dr. Arthur A. Smith, widely-known lecturer and writer on economics; Thurman Sensing, executive vice-president of the Southern States Industrial Council, and Arthur A. Hood, editor of *American Lumberman*. Other speakers will discuss forest conservation, lumber procurement, wood recovery at sawmills and additional topics.

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Woods Management

(From page 36)

than eight rings per radial inch, if crowns do not have about two feet of space between them and have a spread of less than one and one-half feet for each inch of diameter at breast height, the area is in need of a thinning.

Since a thinning operation is primarily to improve the growing conditions for the potential crop trees, the first step is to select the trees that will make the future crop. Trees should be selected on the basis of markets for sawtimber, mine timber and other uses. Then determine what can be done to improve the growing conditions on the area in general and the potential crop trees in particular. Crop trees should be selected for their position in the crown, the species of the tree, thriftiness and quality.

The cutting operation usually consists of removing crowders, whippers, and wolf trees in such a way that potential crop trees will have a space around the outer edge of their crowns of about two to four feet. This operation will not necessarily produce the final crop trees. Therefore we may include some intermediate species or even some undesirables, if necessary, to maintain a fully stocked stand in the crop trees, planning to remove them on the next cut.

In some instances, trees in the understory of the stand will be found that are not affecting other trees one way or another, but have a current market value. If increased volume of material is needed to make an economic operation of the thinning job, these may be marked for cutting.

The tendency is often to mark too many trees, excessively opening the stand and subjecting the trees too quickly to great exposure. This can be avoided by maintaining the crown-spacing previously mentioned. However, through the removal of some large wolf trees, the crown spacing will be necessarily exceeded.

In selecting crop trees, pure stands should be avoided as far as possible. Selecting a variety of species will assure a more thrifty and healthy stand, less subject to attack from insects and disease.

Thinning is an operation that can be profitable to you and helpful to your timber stands. Put it to work in your young stands. For advice, on the ground, consult your local consulting forester, or farm forester who will be glad to serve you.

Before you buy . . .



One look inside the handsome Remington "500 Series" 22 rifles will show you why they're such an unbeatable value. For instance, the bolt has *two* extractors and separate ejector. No chance for stuck cartridge cases!

Notice the *double* locking lugs. They mean years more fun with a Remington . . . maintain correct head spacing for fine accuracy through the years.

The bolt has *double* cocking cams . . . the smoothest type of bolt action made. Doubly safe, too! Red firing indicator signals when rifle is cocked. Red dot shows when safety is off.

No other low-priced 22's give you so many double value features. So for a *lifetime* of shooting fun, see the Remington "500 Series" 22 rifles soon . . . made by America's oldest gunmakers.



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FINE FOR HUNTING—Model 511, sturdy bolt action box magazine repeater. Holds seven shots. Shoots all three sizes of 22's.

BIG CAPACITY—Model 512, bolt action repeater with tubular magazine that holds 22 short, 17 long or 15 long rifle cartridges. Fine accuracy.

Remington

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AFA Sponsors Spring Saddle Trip in Great Smokies

Even the "tenderfoot" can be a real mountaineer on this nine-day horseback ride starting May 22

For the Easterner who is seeking the tonic of a spring vacation in the mountains, The American Forestry Association is scheduling a nine-day saddle trip into the mile-high country of the Great Smokies in North Carolina for the dates of May 22 to 31. Differing from the Association's Trail Riders of the Wilderness expeditions, this trip features daily rides from the Cataloochee Ranch and one overnight camp at old Woody homestead in the Great Smoky Mountains National Park.

The Smokies trip is intended for those who enjoy riding but prefer a comfortable bed at night, rather than inveterate outdoor enthusiasts who really like to rough it. It will include "breaking-in" rides for those who need to brush up on their horsemanship, and each night except one will be spent at the well-appointed ranch house, near Waynesville, North Carolina, which will serve as vacation headquarters. This thousand-acre sheep and cattle ranch is located on the edge of the park.

The trip has been timed to catch the colorful festival of wildflowers and flowering trees at the height of their glory. Here the riders will find the loveliest of wild orchids, the gorgeous pink blooms of the lady slipper, myriad of trilliums, bleeding heart, jack-in-the-pulpit, Dutchman's breeches, wild geranium, columbine, iris and smooth white azalea. Mountain slopes will be ablaze with the flame azalea—rivaled in its profusion and appeal by the laurel, with its cup-shaped blooms of white, speckled with pink. Trees create much of the varying charm of the landscape and enrich the scenery. The delicate green leaves of spring add immeasurably to the richness and rhythm of the hills.

Only by foot or horse can one really enjoy the intimate charm of the rugged Smoky Mountains and the brooding mystery of the blue haze that envelopes the peaks. But who could hope to catch the magic colors of this setting or the chameleonic hues of the distant ridges with a word-camera?

For reservations and detailed information, write to The American Forestry Association, Washington 6, D. C. The cost per person for the full nine days is \$165, and the party will be limited to 15 riders.

Dutch Elm Disease

(From page 27)

chemotherapy for protection of the elms of most value.

Education plays a prominent role in Connecticut's battle of the beetle. Encouraged by the impressive elm-saving accomplishments in Greenwich and Stratford, the state Forest and Park Association launched a public education project in the late summer of 1950. The association employed a technically trained consultant experienced in tree disease control and public relations work. His assignment was to inform all communities about control measures and to encourage local action.

At first only a few communities had any adequate programs to protect public elms. A year later more than 30 cities and towns had started either partial or complete programs. In addition, many private landowners took proper preventive measures.

But the educational program must

TREES TO TOKYO — Forty cuttings from the Japanese cherry trees on the Tidal Basin in Washington, D. C. have been returned to Japan to improve the stock of the famous Adachi Ward groves in Tokyo, which furnished the original trees presented to the United States in 1912. The shipment includes five shoots from each of the eight varieties.

Many of the cherry trees in Adachi Ward were cut during the war and lack of care left the remaining trees in poor condition.

be continued for some time to accomplish its purpose. Only a start has been made toward giving the public a complete understanding of the possibilities of saving the elms. The printed or spoken word is not the same as actually seeing a town like Greenwich in mid-summer with its 6000 public elms in deep green foliage. It takes enthusiastic and informed tree superintendents like Joseph A. Dietrich of Greenwich and Theodore T. Janosko of Stratford to reduce public elm tree losses to less than one percent.

All communities, however, are not blessed with public-spirited officials and groups who will fight hard enough to save as many elms as possible. Thousands more trees will die needlessly in Connecticut because of civic lethargy. Nevertheless thousands of elms have been saved and will be

(Turn to page 42)





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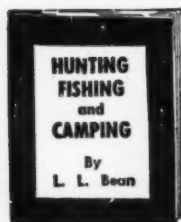
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Dutch Elm Disease

(From page 40)

saved in the communities where citizens respond in time.

It is far less expensive to protect elms than to take down the dead trees in areas where it is most desirable to save them—along streets and near buildings. So even from the economic standpoint it is far cheaper to save the elms than to let them die.

The key to saving the elms is to take the preventive measures before the trees become infected with the Dutch elm disease. If this is done, we can live with the Dutch elm disease and enjoy our valuable street and shade trees.

As Dr. Albert E. Diamond of the Connecticut agricultural experiment station sums it up:

"Research on controlling Dutch elm disease will continue and as improved methods of control are found, they will make the present optimistic outlook even better. It is a measure of progress to compare the gloomy outlook of 15 years ago, when little could be done to protect an elm tree, with that today when a great deal can be done that will assure the continued health of an elm. It was never truer than it is today that the elm is not doomed; in fact, the elm is, through such research as has been done at Connecticut, becoming a better risk as a shade tree than is the oak or the birch."

Logging With Radio

(From page 9)

band is used in Oregon and at other Washington operations. Equipment in use by state forestry departments and the U. S. Forest Service usually operates on other frequencies, but industry tie-ins are worked out by installing proper equipment at central offices.

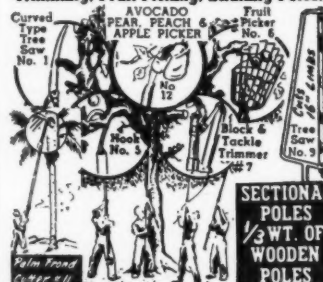
There are a few tricks to making ultra-high-frequency micro-wave radio work properly. Because it is a line-of-sight system of transmission, the sending and receiving sets should be as nearly as possible within sight of each other. "Shadow" areas can be reached if enough power output is used.

Weyerhaeuser is using several remote control stations to boost its radio coverage in rough country. Located on high hilltops, the antennae masts of these remote stations are

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2. Crush out your cigarette, cigar, pipe ashes. Use an ash tray!
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4. Ask about the law before burning grass, brush, fence rows, or trash.

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Recommended by foresters for cruising. Easier to use, faster, positive. Direct course readings. Write for free literature and instructions.

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usually fixed to tall trees. At Longview, Washington's woods headquarters the tree mast is 212 feet high. Power and telephone lines which activate these remote control stations may run from headquarters stations as far as two miles distant.

Beamed from these super-high transmitters, radio waves can penetrate nearly any area in the back country. Natural obstacles, like Mount St. Helens, apparently act as bouncers for the radio waves and cause them to sneak down canyons which couldn't be reached by straight line-of-sight transmission.

Most unusual of Weyerhaeuser's mobile installations is that on a river tugboat at Raymond. This craft, used in herding log rafts to the mill, can be radio controlled from the shore. The river foreman with mobile set in his car can issue changed orders to

PLANTING BOOM—Approximately 25 million trees are being set out in Wisconsin this spring, three million more than last year's total and a record since World War II.

Trees for Tomorrow, Inc., already has allocated its entire supply of 500,000 free trees for hand planting to private landowners in the north-central counties.

An additional 685,000 trees bought by landowners from the state conservation department will be planted by machines routed and supervised by Trees for Tomorrow. The increased number of tree planting machines available has been a notable factor in this year's reforestation program.

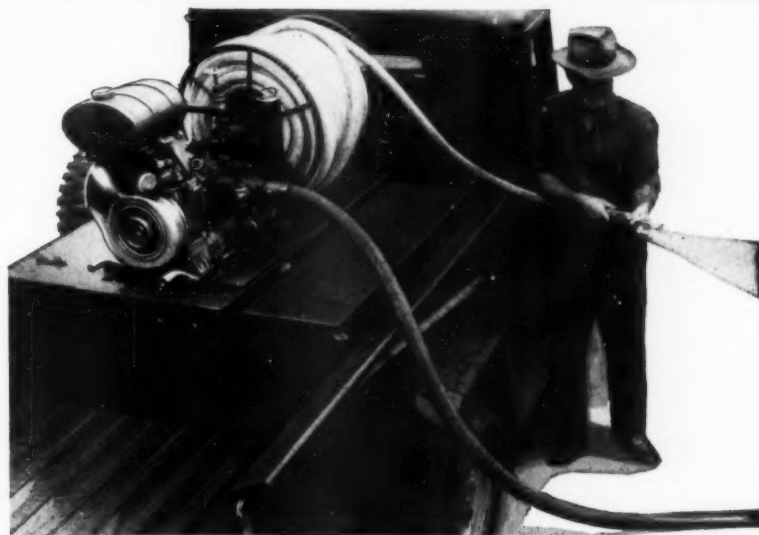
the boat crew upon a minute's notice. It beats swimming!

Other unique installations are in an airplane, where C. Davis Weyerhaeuser, who heads the Forestry and Lands Division, can check forest fires and timber cruises and report to ground crews.

Lippincott stresses maintenance as the most important job in keeping short-wave radios beaming efficiently. He keeps busy making the rounds in Oregon and Washington, troubleshooting on preventive maintenance.

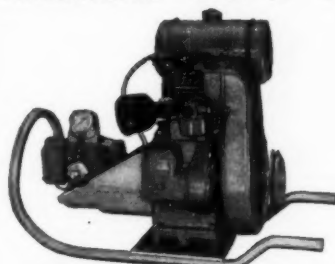
Assigning frequencies to new forest industry users is a serious matter these days for there is a shortage of air space in the West! Some air lanes must be shared. Sometimes this means overlap and double-talk—conversation picked up from other operations. Unless and until the forest industry utilizes fully its allotted frequencies, Surdam anticipates more of these sharing arrangements.

Even the spectrum is a national resource and must be so handled.

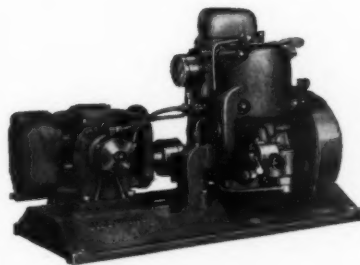


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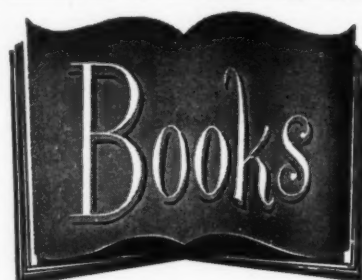
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When ordering books—any book—remember that your AFA membership entitles you to a ten percent discount. Order through the Book Department, The American Forestry Association, 919 17th Street, N. W., Washington 6, D. C.

The Shrubs of Pennsylvania, by William Carey Grimm. Published by The Stackpole Company, Harrisburg, Pennsylvania. 522 pages illus. Price \$5.

A companion volume to William Carey Grimm's *The Trees of Pennsylvania* is his new work, *The Shrubs of Pennsylvania*. This book is a manual of the shrubs and woody vines of the state, and since Pennsylvania is a meeting ground of the flora of North and South and of mountain and coastal plain, the book will serve as a very comprehensive guide to the woody plants, exclusive of trees, to be found in the eastern United States.

The descriptions are brief and depend upon the excellent drawings of leaf, leaf scar, twig, bud, fruit or flower to supply the distinguishing characteristics of each species most useful for both summer and winter identification. The language is non-technical, and the scientific names and their meanings are clearly explained. The site requirements of each species are listed. The botanical characteristics which distinguish the plants in summer and in winter are sketched and described with separate keys for summer and winter use. The book is, therefore, admirably adapted to the needs of the amateur naturalist.

A Boy and His Gun, by E. C. Janes. Published by A. S. Barnes and Company, New York, New York. 207 pages. Price \$3.50.

Step by step, the author, an experienced rifleman and hunter, guides the beginner in selection of his rifle, and through the proper channels of safety, caution, good conservation practices, and the procedures for getting

the most enjoyment from a day in the field.

Taking the reader from his first air rifle through shotguns and big game rifles, Janes describes the functions, use and care of each. An additional asset to the book is that it introduces the young gunner to all important game birds and animals which he is likely to encounter, giving the proper method of hunting each.

North American Trees, by Richard J. Preston, Jr. Published by the Iowa State College Press, Ames, Iowa. 426 pages, illustrated.

Presenting systematic descriptions of 232 natives and introduced species of coniferous and broadleaf trees of important distribution in North America (exclusive of Mexico and tropical United States), this stiff-back handbook is ideal for field use. Brief references are also made to an additional 336 species and varieties of lesser importance.

Designed to meet the needs of an interested non-technical public, as well as those of students and scientists, the book contains clarifying maps and drawings. A comprehensive glossary defines technical terms which are consistently kept to a minimum.

The Land of Little Rain, text by Mary Austin, photographs by Ansel Adams. Published by Houghton Mifflin Company, Boston, Massachusetts. 133 pages. Price \$6.

Combining the works of a woman called by many critics "the most remarkable woman of letters of her generation," and the inimitable camera of Ansel Adams, this volume is an interpretation of the area where impressive beauty is balanced by poignant human detail. In the Introduction, Carl Van Doren says, "Everybody who talked with Mary Austin knew at once that there was greatness in her. . . Readers . . . will find in this selection from her work the records of a woman who in our age left the rough temporary frontier which was a large part of America, went into the venerable desert. . . Because the world had no bread for a prophet, she wrote books to live by. Her books were wells driven into America to bring up water for her countrymen."

In the region discussed, between Death Valley and on into the Mojave Desert, Adams gives us a series of semi-factual and expressive photographs, not only of landscapes but of human expression and human ruins and relics.



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(Turn to page 47)

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(Turn to page 48)

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(Turn to page 49)

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Your Shade Trees

(From page 17)

butternut, beech, walnut, sugar maple, Japanese maple, magnolia, hemlock, yew, Douglasfir, true firs (Abies), cryptomeria, and retinospora (Chamaecyparis). Recommended for control of red spider mites, gall aphids, bark louse, bud scale, oyster shell scale, scurvy pine scale, and tent caterpillar eggs.

Pyrethrum (a contact spray). This is non-poisonous to human beings and warm blooded animals. Paralyzes and then suffocates the insect. Its effect is not always deadly. It deteriorates rapidly. Used for the control of soft bodied insects, such as aphids, lace bugs, tent caterpillars, cankerworms, webworms and leaf hoppers. Even Japanese beetle may be knocked out temporarily.

Rotenone. This is chiefly a contact spray, but is also of limited value as a stomach poison. It is, however, non-poisonous to man or warm blooded animals. It deteriorates rapidly in sunlight. Therefore, spraying must be repeated every five to ten days.

Use for control of insects on fruit trees.

Lime Sulfur. This is used to control both diseases and insects. It is sold as a liquid or a powder. Use on fruit trees for control of leaf spots, apple scab and similar foliage diseases; also, as a dormant spray for control of scale insects on apple and pear trees, blister mites, pear psylla, case bearer on larch, pine needle scale and leaf curl on peach trees.

Warning: Do not use this material near white painted houses. It will leave dark brown spots.

Bordeaux Mixture. This is the most efficient and widely used fungicide we have. Since it is likely to produce russetting of fruit it should not be used on apple, peach, cherry or Japanese plum trees. It is recommended for control of the following diseases: leaf spots, scab, leaf blight, anthracnose and sphaeropsis. Usually two or three applications are required for satisfactory control.

Sulfur. This is the oldest of the

fungicides. Available as a dust or a spray solution. This material is chiefly protective and not curative. It will not "burn-out" a disease. Sulfur should not be applied when the temperature is 90 degrees Fahrenheit or above. Use for control of cedar-apple rust, apple scab, brown rot on plum or cherry trees.

Sticker and Spreader. To keep the spray from washing off and provide a better and more even distribution it is desirable to add certain materials to the solution. These may be any of the following, — soap (except where arsenate of lead is used), raw linseed oil, flour, potassium oleate, sodium oleate, calcium caseinate, cottonseed oil, or fish oil. Of course, no sticker or spreader is needed for any of the oil sprays.

Spraying is simple if you have the proper equipment and know what you are spraying for. The two important facts to remember are: 1.) Use the proper material for the insect you want to control; and 2.) spray at the right time.



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Forum

(From page 2)

the Jemez country for a very long time, I know exactly how destructive surface mining can be in it. Also as a taxpayer in New Mexico I am more than interested, am vibrating with rage.

From David Burns of the Detroit Edison Company's engineering department comes this lengthy and thought-provoking comment on *The Utility Line Problem* which was the subject of the December *Your Shade Trees* article. In the following discussion from a utility engineer's viewpoint he does an excellent job of stating the case for the electric power people:

Your December 1951 issue contained an excellent article entitled *Your Shade Trees—The Utility Line Problem*. The writer approached the problem in a very constructive manner and gave every evidence that the overall interest of the community was the major consideration. I agree wholeheartedly with the philosophy expressed, namely, that the lessons learned in the past should be guides for the future, and that there should be cooperation and understanding between the various interested parties.

Perhaps, however, the utility people, especially the electric power folks, have failed to inform the tree conservationists of all the problems involved, particularly the problem of putting all wires underground in urban and semi-urban areas. I quote from the December article, page 20—"unless our city is unusually progressive and demands that telephone and light wires go underground or along rear property lines"—and page 48 "In the city the real place for utility wires is underground". We agree that on new construction it is preferable to install the pole lines on the rear lot lines. We cannot, however, agree that the ideal solution is to put the lines underground. From the standpoint of tree interference and looks—yes—but the practical and economic factors far outweigh these advantages in nearly all cases.

Let us consider the problem of the electric utility in providing service to a new residential development (this would be the most favorable opportunity to use underground construction if it were feasible).

The cost of an underground installation comparable in quality and reliability to an overhead installation is approximately five times as great. It is reasonable to assume that the beneficiaries of this higher cost service should pay for it. (Most state Public Service Commissions would require this.) Experience has shown that few people are willing to pay the added cost.

Real estate developers can, and have in some cases, provided underground installations for new developments. The utility in such cases will always cooperate with the developer. The cost of such an installation is passed on to the purchaser in the price of the homesite.

We who plan the power lines are nearly all community minded home owners, with trees on our property which we value highly. We give this problem of tree and wire interference continued study. Our trade

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literature describes our efforts to design practical line construction to minimize this interference. We hire more and more tree specialists with the result that increasing consideration is given to tree problems. We invite recognized authorities in the tree field to speak to our groups to tell us their viewpoint. An example of this is the paper given by Paul E. Tilford, Executive Secretary of the National Arborist Association before the Transmission and Distribution Committee of the Edison Electric Institute at Rochester, N. Y. in October 1951.

We are interested in working closer with the National Shade Tree Conference and similar groups. We favor building lines on back lot lines in cities and on private right of way off of tree lined roads in rural districts, and the joint use of pole lines by electric and telephone utilities where feasible. We do, however, oppose the theory that underground construction is the preferred solution, particularly where a pole line is already established. After all, the choice of whether the lines shall be overhead or underground should be the choice of the community concerned. When given all the factors, experience shows that the community invariably chooses the lower cost electricity, even though it may mean fewer shade trees.

Another consideration which has not been mentioned here, but is none the less important, is continuity of electric service. Increasing use of electrical controls for furnaces and electricity for refrigeration calls for serious consideration by the utility engineer of the fact that service can be quickly and easily restored to overhead lines compared with the time required to dig up and repair underground cable.

With the exception of the sweeping statement regarding underground wires, I concur in the many fine points brought out in the article, and hope that the cooperative education it suggests will continue.

Writes Chester P. Holway of Chicago, Illinois:

I can well understand Roger Sheldon's enthusiasm for the yuccas of our Southwest (see February's *A Desert Flower's Riddle*), even grant that they are the most stately members of the big lily family. But considering the true lilies, certainly not the most beautiful! I recommend *Y. filamentos*, the Adams-needle.

Washington Lookout

(From page 4)

introduced by Senator Richard Russell, of Georgia. It would authorize a fine of \$250 for use of the "Smokey Bear" figure without specific authorization by the Secretary of Agriculture. Representative Charles A. Buckley's companion bill, H.R. 5790, has been favorably reported by the Judiciary Committee and is on the Consent Calendar of the House for March 17.

Appropriation hearings for the Departments of Agriculture and Interior have been completed, but no announcement has been made as to the dates when bills for the two departments will be introduced for consideration in the House.

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Editorial

WHO'LL CUT THE O & C MELON?

It's quite unlikely that there exists elsewhere in the nation a more bewildering and embattled dilemma of government land ownership and policies than in Oregon. In her lushly timbered mountains there has simmered and occasionally erupted with reverberating effect a long series of disputes (See *American Forests* for August, 1951) involving controversies between federal bureaus, the state and local counties over the jurisdiction and receipts of some two million acres of government land recaptured from the Oregon and California Railroad in 1916.

The history of this controversy dates back to 1866 when Congress granted to the O & C Railroad odd numbered sections of land to a distance of 20 miles on each side of the track, with permission to select odd sections not more than ten miles beyond the 20-mile limit in the event the company was unable to obtain title to sufficient sections within the original zone.

Because the company violated the terms of the grant, the government revested all unsold lands in 1916 for which the company had received or was entitled to receive patents. These lands amounted to over two million acres and were placed under the administration of the Department of the Interior. Intermingled as these lands were with areas of national forests administered by the Department of Agriculture there immediately arose and continues to this day a confusing, costly, conflicting pattern of federal ownership and administration.

Adding to this confusion, there were also some 462,000 acres of land in the grant limits, but on which the company had not received title nor on which patent was pending. These lands had been included within national forests proclaimed by presidential action between 1892 and 1907 and under administration of the U. S. Forest Service. These are the present lands under controversy and which Senate Bill 539 seeks to detach from the national forests and attach to the O & C grant land administration on the grounds that they are legally a part of the O & C railroad grant, although never patented. This is not the first attempt to acquire administrative jurisdiction by legislation, with earlier ventures failing, notwithstanding the ruling of two

attorney generals that sufficient grounds did not exist to warrant disturbing the status of the lands as national forests.

Ridiculous though the situation is, with two government bureaus involved in a hassle to determine which shall administer almost 500,000 acres of government land, this is believed by many to be merely a smoke screen to the real plum in the bill, — the timber sales receipts paid out to some 18 local counties in the O & C area in lieu of taxes.

Here again is an inconsistency of governmental legalities. National forest lands in the region pay 25 percent of sales receipts back to the counties, a formula used on all national forest lands in this country. The O & C administration by law pays 50 percent of receipts in lieu of taxes. By provision of the 1916 Act, this 50 percent O & C disbursement will shortly become 75 percent! Because of the controversy over these lands, their timber receipts since 1937, and amounting to about \$5,000,000, have been impounded in the U. S. Treasury—nice plum for the picking.

It is difficult in view of this situation to see real justification for S. 539, because of the unfair advantage it assigns to these Oregon counties. Is there any business that could remain solvent if taxes absorbed three-fourths of its gross income? Such a predicament could arise only in the bureaucracies of federal government. Certainly the precedent set in Oregon is out of all proportion to the receipts from federal lands by other bureaus, there or in other states. Furthermore, the national forest and O & C lands are all intermingled.

There is little logic in a system whereby one federal agency pays a local county one amount while another agency just adjoining pays the county two to three times as much, from receipts from the same kind of land! There are many who feel, too, that one increased discriminatory subsidy to the Oregon counties on the O & C lands could start a chain reaction for greater payments from other federal lands throughout the nation.

The problem of equalizing the aid to local governments for lands in federal ownership appears to lie in a solution that will give these local units an assured equivalent of current taxes on comparable lands, not in raiding the federal Treasury.

Bob Feller



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